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# PAPER TRADE JOURNAL

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SEVENTH YEAR

Published Every Thursday by the

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# SUPERFINE PULVERIZED CLAY
# CHEROKEE WASHED CLAY

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**New York**

ESTABLISHED IN 1872

# PAPER TRADE JOURNAL

With Which Is Combined

Vol. LXXXVIII, No. 3 PAPER Thursday, January 17, 1929

# Discuss Clay and Casein Tariff at Washington

## D. Raymond Edgar Argues Before Ways and Means Committee That Duty on China Clay Should Be Increased—H. B. Mills of the Oxford Paper Co. Argues Against Increase on Clay—Walter D. Randall of the Champion Coated Paper Co. Speaks Against Duty on Casein—National Cooperative Milk Producers Present Brief

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 16, 1929.—H. B. Mills appeared before the Ways and Means Committee of the House of Representatives last week on behalf of the Oxford Paper Company in connection with clay for manufacturing paper. He told the committee that he also represented a number of other companies.

Mr. Mills said that some 60 per cent of all domestic and imported clay is used in paper making and all of the manufacturers which he represented, opposed any increase in the present import duties on clay. He refused to get mixed up in any argument when questioned by Representative Crisp of Georgia as to whether he favored any reduction on the duty of his finished product.

### Asks That Rate Be Increased to $3.75

D. Raymond Edgar of Metuchen, N. J., appeared before the committee on behalf of several clay companies. He asked that the $2.50 rate on china clay be increased to $3.75. He said that additional protection is needed as a guard against foreign competition and to insure further development of the industry. He said that much progress has been made since 1922 when a duty of $6 per ton was asked and he added, that much more needs to be done. He spoke of extensive laboratory and other kinds of research work carried on by the industry and that it had "gone into debt" for some of this. He said that average prices have gone down since the last tariff act was passed.

H. L. Derby, of the Kalbfleisch Corporation, New York City, making chemicals used in the manufacture of paper, spoke in connection with the tariff on casein. He said that his firm purchases both domestic and foreign casein.

He told the committee that there is a chemical difference between American and foreign casein, including that coming from both France and the Argentine. He attributed this to the all year grazing of cows in other countries, which gives their casein, he said, a greater viscosity. He contended that the increased rate asked for would not necessarily be beneficial to producing farmers, who, he said, are large consumers of products in which casein is used.

Spokesmen for the various farm organizations appearing before the committee on the casein question asked that the rate of duty be increased from 2½ to 8 cents per pound.

### Walter D. Randall Speaks on Casein

Casein was also discussed by Walter D. Randall of New York City. He said that he is associated with the Champion Coated Paper Company, having mills in North Carolina and Canada. He said a large portion of their casein had been coming from California, where many dairymen have begun to make powdered milk which has cut the supply of casein from that quarter. He said supplies from other sections were insufficient. He stated that in the making of high grade coated paper there is no substitute for casein. He declared that since the duty was put on it, casein has sold at prices about 50 per cent higher than formerly. The casein situation, he said, has greatly disturbed the coated paper industry. With free casein the industry could reduce costs and prices and recover much business abroad and much that has been lost to other papers in this country, he declared. He denied that casein is essential to the dairy industry and said that the paper manufacturers have to pay premium prices for much foreign casein in order to get sufficient material of adequate quality. He said that because of the seasons, Argentine casein comes in at a time, in winter, when domestic production is low. He gave it as his opinion that the making of condensed milk and powdered milk will cause steady curbing of domestic production of casein.

"If free casein enabled you to go into the foreign market you wouldn't need a duty on your product would you?" asked Representative Garner.

Mr. Randall stated that he thought they would, mentioning German competition in portions of the home market and the transportation cost factor. He said it was not certain that they could get back into foreign markets but he thought that, with free casein and free china clay they could do so.

"What percentage of overproduction have you in this country?" Representative Hull of Carthage, Tenn., asked. He estimated that it was 10 to 15 per cent, adding that several plants have ceased producing or changed to other kinds of paper.

W. S. Moscrip of Lake Elmo, Minn., discussed the subject on behalf of the National Cooperative Milk Producers' Federation. He stated that in his organization are 365,000 dairy farmers and 45,000 cooperative producing organizations.

"Ours is the only national dairy co-operative organization," he said, "and I think we represent the dairy farmers. This, I believe, is the opening of the question of farm relief."

Mr. Moscrip declared that the Tariff Commission found that the duty on casein affected the price of coated paper in the extent of one and three-tenths mills a pound. He stated that the additional duty he would ask should add only three mills. He stated that an increase of from 2½ to 8 cents a pound in the casein duty would be asked on behalf of the dairy farmers. "The proposed duty we are asking on behalf of the American dairy farmer will assure to him only about ½ cent a quart on that account for skimmed milk and I think it a very reasonable request," he declared.

In answer to questions he stated that, in his opinion the dairy farmers can fully meet the domestic demand for casein. "Has there been any complain on account of the quality of the American product?" he was asked by Representative Hadley, of Bellingham,

(*Continued on page 76*)

# Canadian Interests Buy Lakeview Paper Mill

## Organization Which Includes Abitibi Pulp & Paper Co., and Mead Pulp & Paper Co., Will Take Over Operation of Old Sears-Roebuck Property Before End of Month—Plant Is Equipped With Two Machines, 110 and 114 Inches Width Respectively

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 14, 1929.—Sale of the Lakeview Paper Company, of Neenah, Wis., to the Mead-Abitibi interests, was announced last week. The mill has been owned since 1920 by Sears, Roebuck & Co., Chicago, and has been devoted exclusively to the manufacture of paper for mail order catalogs.

This is the second purchase within a few weeks announced by the Canadian interests which include the Abitibi Pulp and Paper Company of Canada, and the Mead Pulp and Paper Company, of Dayton, Ohio. The organization recently acquired the capital stock of the Thunder Bay Paper Company, of Port Arthur, Ont., one of the mills of the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis.

Operation of the Lakeview mill will be taken over some time this month, but no announcement has been made by the new owners as to the kind of paper that will be produced. The mill was built in 1911 by the Lakeside Paper Company, headed by E. J. Lachman. It has two machines, 110 and 114 inches, respectively. When acquired by the Sears-Roebuck interests, the name was changed to the Lakeview Paper Company, and production increased to forty tons daily. Philip Nash has been the manager.

### Kaukauna Mills Enjoyed Good Year

Business of the paper mills and allied industries at Kaukauna, Wis., was highly satisfactory during 1928. The Union Bag and Paper Company was on a par with 1927 but filled more orders in 1928. One hundred men have been employed steadily, and the number of days of operation was equal to that of 1927.

About 650 men have been employed by the Thilmany Pulp and Paper Company, with less labor turnover than in the previous year. Demand was generally good but there has been a slight decrease since the first of this year.

More paper was manufactured at the Kaukauna mill of the Patten Paper Company, Ltd., than in 1927 and the number of orders were larger. There were no shutdowns and 120 men were constantly on the payroll.

At the Moloc'a Foundry and Machine Company, 1928 was considered the best year in the company's experience. The plant has been running 24 hours daily most of the year with a force of 185 men. Quite a number of unfilled orders were on the books at the opening of 1929 and the outlook is excellent.

### Peshtigo Reorganization Plans

All of the first mortgage bonds of the Peshtigo Paper Company, of Peshtigo, Wis., are being called in by the bondholders committee, which is headed by Morris F. Fox, of Milwaukee. This step is preparatory to the sale of the mills at auction on January 21, at which time the plan of reorganization is expected to go into effect. The bonds bore seven per cent interest and were to mature in 1942. Owners of these bonds will participate in the reorganization so that their holdings will not be an entire loss. The plan is to start a new company known as the E. A. Meyer Paper Company, headed by E. A. Meyer, formerly of Menasha, Wis.

### News of the Industry

Slight damage was caused by a fire last week at the Interlake Pulp and Paper Company, of Appleton, Wis. An early morning blaze started in a chip bin, presumably from combustion, and burned for about half an hour. The fire was confined to its source, however. Operation of the mill was not affected.

Whether the Riverside Fibre and Paper Company, of Appleton, Wis., must pay compensation for the death of Edward Gastrock, is to be determined by the Wisconsin Industrial Commission, following a hearing held last week. Mr. Gastrock died from intestinal ruptures caused by the careless use of a compressed air hose by fellow employees at the mill. The commission will decide whether the accident was in the line of duty or was "horse play."

Ingraining in the minds of children the value and need of forest conservation is a move that has been undertaken by Ben J. Rohan, superintendent of schools at Appleton, Wis. He has prepared a book called "Our Forests—a National Problem," and is placing it in schools all over the country as a regular course of study. It is the first attempt to make people "forest minded" from their youth and is expected to bring about a public sentiment that will count in the years to come when timber becomes scarcer and more valuable. Mr. Rohan developed the book for his own pupils while a principal, believing such instruction was needed, and was encouraged by educators and conservationists to publish the text for general use.

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### Pacific Straw Board Co. To Expand

[FROM OUR REGULAR CORRESPONDENT]

LONGVIEW, Wash., January 11, 1929.—The Pacific Straw Paper and Board company announces the erection of a new machine room as part of its 1929 expansion program. The building will be 50 x 272 feet in dimensions, of reinforced concrete, in which will be installed machinery for the manufacture of heavier boxboard, and additional type of liners, as well as pressers and pasters. The building will be identical with the present machine room according to George A. Sweet, secretary-treasurer of the company.

This will enable the company to increase the variety of its products and its tonnage without much increase in production expenses.

During 1928 the company established waste paper stations in Seattle and Portland. Two warehouses were erected giving 4080 feet of space for the storing of expensive raw materials, and 2000 feet of spur track were added. The present capacity of the plant is 30 tons daily. The mill worked three eight hour shifts all year, seldom closing for holidays or Sundays.

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### B. T. McBain Leaves Northwestern Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., January 11, 1929.—B. T. McBain, pulp and paper specialist with headquarters in Portland, on January 1 resigned as member of the board of directors, member of the executive committee and vice-president of the Northwestern Pulp and Paper company, which has plans under way for a new plant at Astoria. A contract which Mr. McBain holds with the Austin company for supervising the construction of the plant will be carried out.

Mr. McBain states that H. O. Schundler, representing an eastern financial group backing the Astoria project, spent most of December in the vicinity and upon leaving for New York stated that he was entirely satisfied with his survey and would so report to others associated in the interest with him. Funds called for under agreement it is said will be available under the terms thereof.

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### Standard Paper Co. Dissolved

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 14, 1928.—Officials of the Standard Paper Company of Indianapolis have filed papers with the secretary of state of Indiana evidencing the final dissolution of the corporation.

Downingtown Mfg. Co.
Downingtown, Penna.
U.S.A.

# Paper Business Shows Improvement in Chicago

## Demand for News Print Paper Is Well Up to Average While Various Grades of Fine Paper Are in Fair Request for Time of Year—Book, Tissues, Wrapping Paper and Paper Boards Rule Quiet at Present—Paper Stock Market Exhibits Better Tone

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 14, 1929.—Business in Chicago is moving slowly but surely out of the January inventory period and in another week, with inventories taken, Chicago paper merchants will be confidently looking forward to increased business. With a Chicago meeting of the Paperboard Industries Association coming on, the Chicago Paper Association beginning its new year, the meeting of the National Paper Trade Association scheduled for February and the Chicago Division of the Salesmen's Association of the Paper Industry busy on a new series of interesting programs Chicago association affairs are also taking on new life.

The publishing of a magazine, a newspaper and a farm journal on paper made from cornstalk pulp created quite a bit of interest in Chicago with the consensus of opinion seeming to be that the new form of paper will not be satisfactory for news print, being too hard and opaque, and not satisfactory for book paper. Merchants do seem to think that it may fit into the bond and writing paper lines in good shape, according to reports.

The news print tangle should be settled by some important conferences but, in the meantime, the demand holds good and production runs comfortably near the 100 per cent goal. Book, tissues, wrapping papers, board, etc., are slow now. Fine papers are fairly active while waste papers are in better tone.

### Paperboard Industries Meeting

The next meeting of the Paperboard Industries Association is to be held at the Palmer House, Chicago, January 23 and 24. This will be the first meeting of the year and the meetings will be presided over by officers elected at the annual meeting in November as follows: John J. Brossard, president of the association, will preside at the general meeting of the three groups in joint session; H. H. Stonebarger, vice president, at the Folding Box Group meeting; Hugh Strange, vice-president, at the Paperboard Group Meeting, and H. C. Krannert, vice president, at the Container Group meeting.

According to information from the Chicago office of the association this January meeting takes on an important character inasmuch as the statement has been made that no improvement in the industry can be expected until the factors in the industry decide upon a constructive program calculated to remedy the present unsatisfactory condition. It is hoped that the next meeting of the association may prove to be the turning point toward greatly improved conditions in the paper board, container and folding box industries.

It is also expected that definite advice will have been received by the time of the January meeting regarding the action of the Federal Trade Commission on the proposed Trade Practice Resolutions recommended by the industry, which are now under advisement by the Federal Trade Commission and further consideration will be given this important subject at the January sessions. The personnel of the Standing Committees to function for the ensuing year will be announced at the next meeting.

Announcement is also made concerning the time of all meetings. The Standing Committee and the Executive Committee will meet Tuesday, January 22, in the morning and afternoon respectively. On Wednesday, January 23, the meeting of the Folding Box Group will be held from 10:00 a. m. to 12:30 noon and the Paperboard Group from 2:00 p.m. to 4:30 p.m., both in the foyer on the 4th floor of the Palmer House. On Thursday, January 24, the Container Group will meet from 10:00 a.m. to 12:30 noon while a luncheon will be held at noon for all members. From 1:45 p.m. to 4:15 p.m. the three groups will meet in Joint session. All Thursday meetings are scheduled for the Red Lacquer Room. All meetings are given in Central Standard Time.

### M. A. Williamson to Address Salesmen

The January 21 meeting of the Chicago division of the Salesmen's Association of the Paper Industry, to be held at the Hamilton Club, will be featured by the presence of M. A. Williamson, publishing director of the Food Industries Division of McGraw-Hill. Mr. Williamson will talk at this regular Monday meeting of the Salesmen's Association on paper as it pertains to the food industry. His long and varied experience in this field assures the large number of salesmen who will undoubtedly be present of an interesting discussion pertaining directly to their own work.

Mr. Williamson has already appeared before the paper industry in a similar capacity when, some time ago, he gave an address before the New York Division of the Salesmen's Association. According to H. R. Knott, of the Eastern Manufacturing Company, who is president of the local organization, Mr. Williamson gave such an excellent presentation of his subject that he was prevailed upon to come to Chicago to talk to the salesmen here. His appearance will constitute the first of a series of talks to be given by well known leaders in different lines of industry, all of whom will appear at the regular Monday meetings of the association in the College Room at the Hamilton Club.

### News of the Trade

Gerald Miner, for a number of years associated with the Butler Paper Corporation, has recently become associated with the D. W. Dietrich Paper Company, with offices in the Builders Building, Chicago. Mr. Miner has been developing specialty business for the Butler Corporation for some time and his work with the Dietrich organization will continue along these lines with a number of additions. As in his former connection, Mr. Miner will be working in the Chicago territory where he is assured of the attention and best wishes of a large number of friends and acquaintances in the paper field. He is the son of H. J. Miner, well known manager of the western division of Hollingsworth and Whitney.

D. W. Dietrich has announced that the office space in the Builders Building will be enlarged to take care of increasing business, that a switchboard will be installed to further service phone accounts promptly and that the outlook for the coming twelve months seems better than it has for a number of years past. The addition of Mr. Miner to the sales force has rounded out a selling organization that, in its two years in the Chicago market, has made itself strongly felt. Mr. Dietrich also announces a change in the telephone number for the benefit of out of town customers. The exchange number is now Central 0027 and Central 0028.

The Champion Coated Paper Company is comfortably installed in its new Chicago offices in Room 1841-2, the Conway Building—just six floors above their former location. A visit to the new quarters bears out Bob Butterworth's predictions that there would be plenty of space for expansion. The suite is roomy, with the length of the office space doubled over its former dimensions. A private room for long distance phone calls and for consultations, etc., is a feature of the new offices.

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### No Change in Swedish Pulp Prices

WASHINGTON, D. C., January 16, 1929.—A report from Consul M. P. Dunlap, Stockholm, states that there was no change in pulp and paper prices during the second half of November in Sweden. News print was quoted at $68 per metric ton, kraft paper in rolls or sheets at $99 to $153, according to weight; and M. G. sulphite at $91 to $142 for rolls and $94 to $145 for sheets; all quotations f.o.b. Swedish ports.

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**Read the letter from Mr. D. C. Everest and then write us. We will send more detailed information or our survey engineer to make examination and submit report.**

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11/10/28

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Yours very truly,

MARATHON PAPER MILLS COMPANY

D. C. Everest

Vice President & General Manager.

DCE:JW

# Gigantic Power Project Planned for Quebec

## Scheme Proposed by Beauharnois Light, Heat & Power Co., Would Harness Practically Full Power of St. Lawrence River—Estimated Cost of Plan $205,052,000 With Eventual Development of 1,979,700 h.p.—Some Powerful Interests Oppose Plan

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 14, 1929.—The pulp and paper industry in Canada is indissolubly bound up with the hydro-electric industry, and as a result developments in the latter industry are closely watched by power and paper interests. In this connection there is one great scheme which at the moment overshadows for them even the crisis in the news print industry, and that is a plan put forward by the Beauharnois Light, Heat and Power Company for the most gigantic development of the power of the St. Lawrence River which has yet been mooted. Under this plan it is proposed to harness practically the full power of the St. Lawrence River a few miles above Montreal. This would entail the diversion of the river from its natural bed into a huge navigation canal thirteen miles long by no less than half a mile wide, this great size being necessary in order that ocean vessels which eventually may use the St. Lawrence from Montreal to the Great Lakes may have comparatively still water and navigate in safety. The estimated cost of the plan is $205,052,000, with an eventual development of 1,979,700 h.p.

The head of the company fostering this enterprise is Frank P. Jones, one of the richest and ablest business men in Canada, and he is backed by extremely powerful interests. He states that he has already made provisional arrangements for the establishment of entirely new industries which would use a large portion of the power, and that provisional arrangements have also been made with the Ontario Hydro-Electric Commission for taking a large block of the power for use in Ontario, where a power shortage is already beginning to manifest itself.

The plan has already received the endorsation of the Quebec government and the Quebec Legislature, despite determined opposition of such powerful interests as the Shawinigan Water and Power Company, which supplies a large proportion of the pulp and paper mills in this Province with power, and by the Montreal Light, Heat and Power Company, which has a monopoly in the supply of hydro-electric power in Montreal and district. Then again important international interests arise, for the report of the Joint Board of Engineers appointed by the Governments of the United States and Canada to inquire into the development of the St. Lawrence is definitely against such a plan.

In Ontario there is some opposition to the plan, but on the other hand Premier Ferguson favors it, and so do many others in authority, as they see the need for the power.

Before the plan can be carried out, however, the consent of the Dominion Government is necessary, and for weeks past one of the most strenuous battles in the history of politics has been staged behind closed doors at Ottawa before the members of the Cabinet. It is said that most of the members of the Cabinet favor the plan, but that it is being opposed with extraordinary force and ingenuity and resourcefulness by the Minister of Public Works, Mr. Elliott.

The Government has been under such tremendous pressure to sanction this scheme, yet has received so many impressive protests against its danger that it has finally decided that a public hearing will help in solving its perplexities. This hearing will open in the office of the Minister of Public Works on January 15.

By granting such a hearing the Cabinet, of course, commits itself to nothing. All that it has done, really, is to take a step that will get all the facts, pro and con, before the public, and then try to judge from the public's reaction to them what it ought to do.

This, it is expected, will involve long delay. The Government, quite naturally, and with an eye to political consequences, will wait for some weeks to get a line on what the country may think of the facts that are brought out. Then, quite conceivably, Parliament being in session, or about to go into session, it may quite logically and naturally decide that Parliament should be given the job of further examining the facts and possibly of deciding the issue. At any rate, a public hearing will enable the Government to test out public feeling on the matter and guide it on the course fraught with high political consequences, whatever the decision may be.

### News Print Prices

During the past week news print executives have again been in session in Montreal trying to solve the vexed question of news print prices for the current year. At the time of writing an announcement was momentarily expected, and may therefore be forthcoming by the time this appears in print. The only feeling at present is that prices will be materially lower than in 1928.

### News Print Freight Rates

An Interstate Commerce Commission hearing which will have a very important effect on the news print industry of this province, opens in New York on Tuesday the 16 inst. Some of the eastern Canadian mills have been complaining without effect against the discriminatory freight rates enjoyed by their competitors in the State of Maine and elsewhere, and the matter is to be brought to a head on Tuesday. The affair has been brewing for some time, several preliminary conferences have been held at Washington, and the official case originally confined to a complaint from New York publishers has extended to such dimensions and become so important that practically all freight rates on news print paper to points in the United States, east of the Rockies, are now involved.

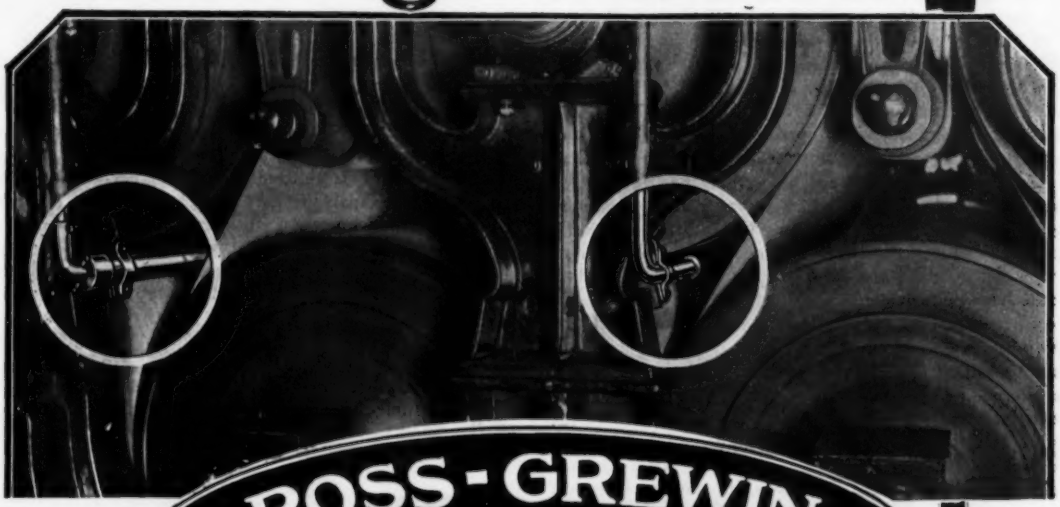
The following paper mill representatives left on the evening of January 14 for New York: G. E. Macfarlane, of the E. B. Eddy Company; W. H. Pabke, of Price Brothers; J. M. Potts, of J. R. Booth, Ltd., and Guy Tombs and A. S. Kirk, of Guy Tombs, Ltd. Mr. Tombs will be the first witness, appearing on behalf of thirteen Ontario and Quebec mills, namely: Anglo-Canadian Pulp and Paper Mills, Ltd.; J. R. Booth, Ltd.; Brompton Pulp and Paper Company, Ltd.; Canada Paper Company, Ltd.; Donnacona Paper Company, Ltd.; E. B. Eddy Company, Ltd.; Lake St. John Power and Paper Company, Ltd.; Laurentide Company, Ltd.; Port Alfred Pulp and Paper Corporation; Price Brothers and Company, Ltd.; St. Lawrence Paper Mills Company, Ltd.; St. Maurice Valley Corporation, and Wayagamack Pulp and Paper Company, Ltd.

### Montreal's Experimental Paper Mill

In order that the experimental paper mill which forms an important feature of the Pulp and Paper Research Institute at McGill University, Montreal, may be ready for operation on January 25, the date set for the formal opening, engineers and mechanics are working day and night. The plant includes a complete paper-making machine, together with the necessary barkers, chippers, digesters and various other auxiliaries of a paper mill, so that, when the mill is completed and ready to operate, it will lack none of the essentials, although constructed on a scale somewhat below that of a normal commercial plant, this one being intended for experimental purposes only. It is planned to have the mill ready to operate at the time of the visit of the Governor-General, Lord Willingdon, and, if possible, to invite His Excellency to press the button which will set the machinery in motion.

The formal opening is to take place in connection with the 16th

# Savings Proved



## ROSS-GREWIN
## High Pressure Ventilation
### For Pulp and Paper Drying Machines

Records from the mills now operating this high pressure system, show conclusively that it is capable of reducing pressure in the dryers materially. Thin jets of warm air, blown at high velocity into pockets, the currents introduced alternatively from both sides of the machine, not only entirely absorb the vapor, but secure even drying across the sheet. The small supply pipes do not interfere with the attending of machine and naturally require minimum space, power and heat for the comparatively small volume of air used. Effective, efficient, economical.

We are prepared to furnish actual records of remarkable savings being effected as well as important production advantages being secured. Write us — no obligation.

## INSURES

Uniform Dryness of Sheet.

Comparatively Small Initial Cost for Installation.

Saving in Steam Consumption of 7% to 10% or Corresponding Increase in Production.

Smaller Felt Cost.

Smaller Space, Heat and Power Requirements.

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## ROSS ENGINEERING OF CANADA, LIMITED

NEW BIRKS BLDG., MONTREAL

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HEATING—VENTILATING—DRYING

annual meeting of the Canada Pulp and Paper Association, and its associated bodies, which will occupy the greater part of the week of January 21.

In addition to Lord Willingdon, who will preside at the formal opening of the Institute on January 25, the Hon. Charles Stewart, Minister of the Interior, Premier Taschereau of Quebec, Premier Ferguson of Ontario, and Premier Rhodes of Nova Scotia, will attend and take part in one or more of the special events. President D. C. Everest and Secretary O. M. Porter of the American Paper and Pulp Association, and President E. H. Butler and General Manager L. B. Palmer, of the American Newspaper Publishers' Association, are amongst those who will honor the occasion with their presence. The fact, also, that the News Print Service Bureau of New York, of which Royal S. Kellogg is general manager, will hold its annual meeting in Montreal on Thursday of that week, insures a large attendance of news print manufacturers from both Canada and the United States. The Canadian Paper Trade Assocation, comprising the principal wholesale distributors of paper throughout the Dominion is also holding its annual meeting in Montreal during the week.

The Institute will be open to visitors from abroad on Tuesday, and in the afternoon a conference on the general subject of Technical Research as applied to Industrial needs will be held in the building. Acting Principal Martin of the university will preside. Dr. W. D. Bancroft, Professor of Inorganic and Colloid Chemistry, Cornell University; Dr. W. K. Lewis, director of Chemical Engineering and Technical Research, M. I. T. School of Practice; and Prof. H. M. Mackay, dean of the School of Applied Science, McGill University, will present papers.

### Heads E. B. Eddy Co.

Victor M. Drury, of Montreal, has been elected to succeed the late Geo. H. Millen as president of the E. B. Eddy Company, of Hull, Que., one of the most important manufacturers of paper products, including news print, in the Dominion. Mr. Drury is a relative by marriage of Lord Beaverbrooke, the Canadian owner of the *Daily Express* in London, and is his principal representative in Canada. He holds many important offices, being president of W. M. Aitken & Co.; vice-president, The Foundation Company of Canada; director and chairman, executive committee, Canadian Car and Foundry Company; director, Canadian Steel Foundries Company; Cuban Canadian Sugar Company; Brandram-Henderson, Ltd.; Price Bros. & Co., Ltd.; The Hull Electric Company; Canadian International Paper Company; Hamilton Bridge Company, Ltd.; Nova Scotia Public Cold Storage Terminals, Ltd.; Canadian Vickers, Ltd.; Canadian Hydro-Electric Corporation; Canadian Wright Company; North American Aviation Corporation; Sikorsky Company.

### Canadian Paper Convention Program

On Wednesday, the Woodlands and Technical Sections of the Association will each begin a two-days' session, the former at the Ritz-Carlton Hotel and the latter at the Research Institute. Numerous papers and discussions of interest to the members will comprise the two programs, which will culminate in a joint session to be held at the Ritz-Carlton on Thursday afternoon, at which a topic of mutual interest will be up for consideration. H. J. Buncke, of Iroquois Falls, Ont., will preside at the Technical Section meetings, and B. F. Avery, of Sault Ste. Marie, Ont., will be chairman of the Woodlands meetings.

On Thursday each Section will entertain at luncheon at the Ritz-Carlton. The speaker at the Technical Section luncheon will be Dr. Wilder B. Bancroft, of Cornell University, who will speak on "Science and Cellulose." On Thursday evening the two sections will unite in a cabaret dinner at the Ritz-Carlton.

On Friday morning, January 25, the sixteenth annual meeting of the Canadian Pulp and Paper Association will be called to order by President C. H. L. Jones at 10 o'clock in the assembly room of the institute. There will be the usual annual review of the affairs of the association and of the industry, followed by the annual election.

At noon the Governor-General will visit the institute and preside at the inaugural. The Dominion Government will be represented by the Hon. Charles Stewart, Minister of the Interior; McGill University by Dr. C. F. Martin, the acting principal, and the association by Col. C. H. L. Jones, its president. Following the inaugural the institution will be thrown open to the inspection of the visitors.

The official luncheon of the Association will be held at the Ritz-Carlton Hotel on Friday, and the Governor-General and his suite will attend. Colonel Jones will preside and the principal address will be delivered by Dean Ira A. Mackay, of the Faculty of Arts, McGill University.

In the evening the sixteenth annual dinner will be held at the Ritz. The principal speakers will be Premier Taschereau, of Quebec, Premier Ferguson of Ontario, and Premier Rhodes, of Nova Scotia.

The Pulp and Paper Institute represents an investment of half a million dollars, and was erected at the cost of the association. It brings together in a co-operative industrial research enterprise, the Federal Government, McGill University, and an organized trade association, as it provides accommodation for the McGill Department of Industrial and Cellulose Chemistry, the Pulp and Paper Division of the Forest Products Laboratories (owned by the Dominion Government), and the offices of the Canadian Pulp and Paper Association.

### Pulpwood Moving Well

From New Brunswick comes the news of increased activity in the pulpwood market. The price has not been affected yet, but movement of the surplus which has existed in New Brunswick for some time has begun. It is anticipated that the demand from the pulp mills will exhaust the surplus stock in this province during the shipping season of 1929, and that the next peeling season will be on new wood. The movement of pulpwood to the mills is the first which has taken place since May last from this part of the country. The mills are cutting down surplus stock, and have been trying to get to the bottom of piles which are three and four years old. This will prevent the wood from becoming too old.

Pulp mills in both Maine and New Brunswick have begun to draw material from this province again. Contractors are filling the demand, and the result is greater activity in pulpwood than New Brunswick has seen for some time. The general tone in regard to pulpwood is more optimistic than it has been and the 1929 peeling season and subsequent seasons are expected to be better.

### Re-financing for Dryden Paper Co.

Under the new president, J. H. A. Acer plans for the reorganization of the Dryden Paper Company are proceeding apace. From what figures are available, it appears that Dryden requires at least $3,000,000 to place itself on a proper financial footing once again and so to take advantage of the present satisfactory situation existing in the sulphate and kraft paper industry. Proposals for the new capital structure will be submitted at the annual meeting of shareholders this week.

## To Represent Copes System in Pittsburgh

ERIE, Pa., January 14, 1929.—Northern Equipment Company, Erie, has appointed Bradshaw & Co., 530 Fourth avenue, Pittsburgh, to represent the Copes System of Boiler Feed Control in the Pittsburgh District. Grant D. Bradshaw is president of this newly organized firm which is to specialize in power plant and steel mill equipment. Mr. Bradshaw was formerly president of Andrews-Bradshaw Company from its organization n 1915 until its consolidation with Blaw-Knox Company in January 1, 1928. During that time he devoted much of his time to Copes equipment and, as a result, is probably one of the best informed men in the country on the subject of feed water regulation. During 1928 he was manager of the Andrews-Bradshaw Division of the Blaw-Knox Company, resigning the first of this year to organize Bradshaw & Co.

# The acceptance of Noble & Wood Jordans as standard equipment by mills dominant in the production of every variety of paper is the best evidence of their ability to produce.

# NOBLE & WOOD

MACHINE COMPANY

HOOSICK FALLS, N. Y.

# Philadelphia Paper Trade Mostly Optimistic

## Distributors Predict Higher Values in Near Future With Gradual Rise Until End of Current Year—Demand for Wrapping Paper and Specialties Was Heavy During Last Twelve Months But Margin of Profits Was Smaller, Due to Keen Competition

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 14, 1929.—Much gratification is expressed by local dealers over the revelations made by the summary of the year's accounts for 1928 and the improved conditions manifested. While the optimism is chiefly concerned with the wrapping paper business and the wholesale trade, there is an incentive for greater effort in the fine paper division as figures show that demands were well maintained, despite the opinion that business did not keep pace with the preceding year. Though the volume of wrapping paper and specialties bulked larger than the preceding year there were smaller margins of profits proportionately, as the final quarter of the year effected inroads on values that materially cut the totals of the twelve month period. Inventory records show smaller stocks on hand of the standard grades that meet paper traffic the year round. A few specialties of the cheaper grades of wrapping and like commodities are held over but generally speaking the local trade is well cleaned up on old stocks and ready to move ahead.

The distributors are in better position than the manufacturers appear to be at this time. While the dealers are working for steadier conditions in the paper market the mills are waging battle for orders. Distributors state the local industry is not overstocked with unsalable goods and will be ready for restocking on broader scale when the manufacturing industry reaches steadier trends through elimination of the present keen bidding for orders. It is the opinion of the distributors that higher values will prevail with spring time and a gradual rise in the price of paper continue throughout the season.

That the better grades of paper must eventually be subjected to higher values is verified by the current soaring rates on scarce and selected grades of paper stock and rags. High grade paper stocks in the book, ledger, writing and new white lists are now at the best prices obtained in the post war period. There are few of these to be had at any price and mills are now buying heavily in anticipation of growing scarcity when operations in the manufacturing branch of the industry warrant heavier consumption. Wholesale paper stock dealers are shipping to the mills all incoming quantities of these grades and no accumulations are on hand. On the other hand the cheaper grades of paper stock are lagging and holding at lower levels.

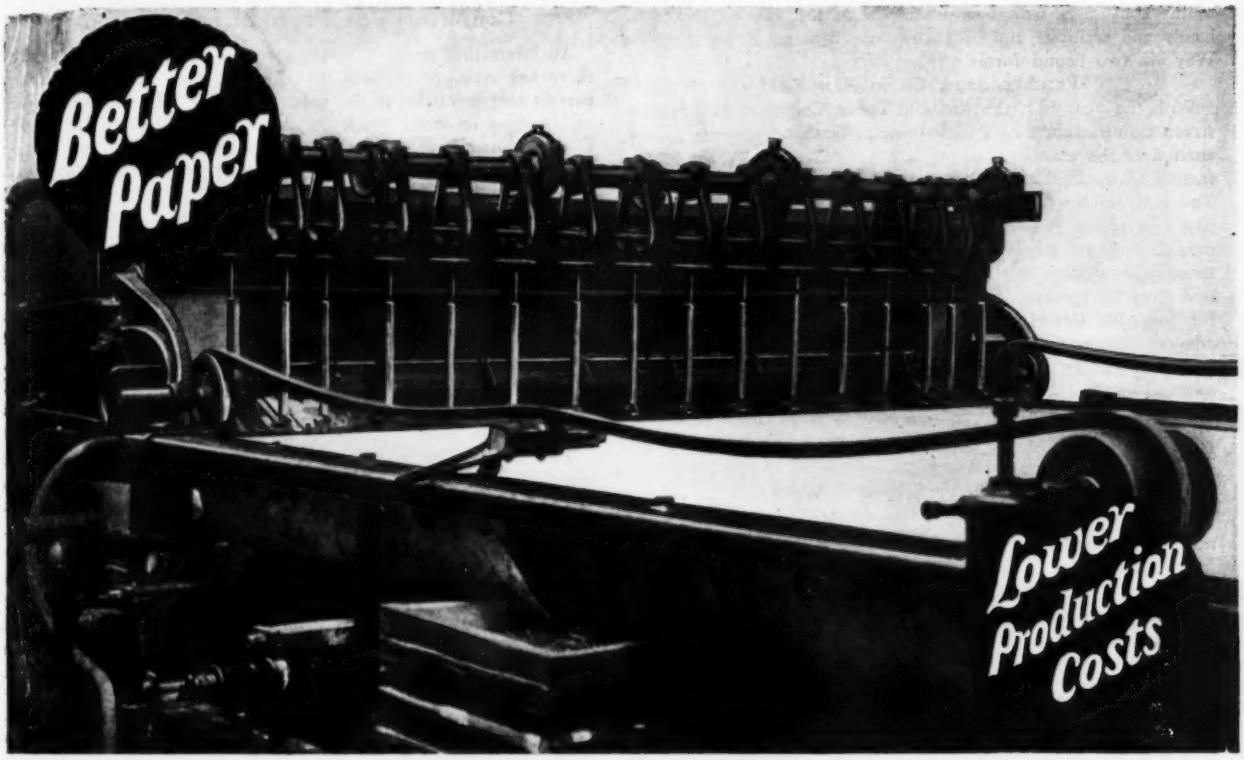
### Paper Trade Association Looks Ahead

The Philadelphia Paper Trade Association met yesterday at the Bourse. President Simon Walter went into details of association work and the benefits it incurred to the membership. He urged his fellows in the industry to bear in mind the valuable sources of information which the organization was able to give to those who were progressive and who would take advantage of the opportunities offered. He stressed the importance of united effort and urged co-operation in further extension of membership and to enlightening those who were not now affiliated with the body, impressing upon them the valuable helpfulness of this "clearing house" of trade activities. President Walter explained at length the helpfulness to the members, stating that it was worth the price of enrollment to have opportunities of meeting with the leading trade interests and the exchange of valuable business information which the members enjoyed through contact with their associates. The organization he also said, was a means of keeping informed of mill activities and trade happenings. There was open forum discussion on prospects for the coming year and many optimistic forecasts were made. It is believed that the coming months will effect a steady paper market with broadening of paper sales and a wider distribution of paper generally, rather than the specialized markets which have ruled during the past year.

### Paper Users Standardization Bureau Meets

Economy to the consumer, distributor, and manufacturer, was the keynote struck in the various talks given by factory representatives of the American Writing Paper Company, at the annual session of the Paper Users Standardization Bureau held here last week in a two days program at the Ritz-Carlton Hotel. The meetings were attended by the representatives of the most prominent industrial, business and professional concerns of the city who are heavy consumers of paper products and especially those in the better grades of writings and printed products and forms. They were selected from the list of patrons supplied by the local distributors of the American Writing Paper Company and the Philadelphia branch. The paper houses who represent the Eagle A papers are Reigel & Co., Inc., the Richie-Howarth Company and the Garrett-Buchanan Company. The speakers from the staff of the American Writing Paper Company were Robert C. Fay, director of the Paper Users Standardization Bureau; Miss Helen U. Kiely, of the Holyoke plant and scientific director of the Bureau; G. V. Norwood, who looks after the Washington, D. C., headquarters of the company, and who is in charge of standardization work in this district; Philadelphia manager of the A. W. P. Company, Frederic Hastings, his assistant, J. E. Snyder, and representatives of the N. W. Ayers Company, advertising concern, looked after the details of the arrangements.

Director Fay spoke on his extensive research work among consumers of paper specializing upon the larger consumers like the General Electric Company, who after standardization had been effected reduced consumption of paper to a fraction of former grades with a wide cut in the cost of printing and paper. He told how he had reduced paper consumption from 278 grades to 15 grades, all equally adaptable to the same use and with lower cost of the papers formerly purchased with regard to price as a basis for their durability. He told how he had shown the consumer that paper usage was not a matter of price but a question for laboratory analysis in determination of its adaptability to the users needs. In other words, he said, the buyer often based a paper's durability upon its cost rather than upon its technical qualifications and by showing the consumer that often lower priced products were just as useful and durable as higher valued grades wide margins of savings were effected. He demonstrated his remarks with charts and referred to information contained in the various publications of the Bureau showing where scientific surveys had verified his researches along these lines. He urged classification, not by price but by standardization, in the use of papers among the consumers. He stated he had made 600 surveys in the standardization tests, and from these drew his conclusions for paper consumption by the leading industries, business concerns and professions of the nation. Miss Keily spoke on the technical points of paper and the proper kinds to be used for various purposes determined by the Bureau's tests. She went into the matter of paper making showing the American Writing Paper methods of production from the preparation of raw contents to the shipping of orders, stating that the same basic materials used for the paper production of the Chinese 4,000 years ago were in general use today and consisted chiefly of vegetable fibers. Expensively prepared literature on standardization of paper as it has been perfected by the American Writing Paper Company was distributed

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By eliminating items of operating expense, the Voith Stock Inlet is today outstanding paper mill equipment—proven on 256 installations in mills throughout the country. It not only lowers production cost, but better paper is produced by the machines.

Easily installed—any customary weekly shutdown is time enough for installation—the Voith Inlet performs equally well on Fourdrinier, Yankee or Harper machines. Savings are shown, for example, on such items as—

*Wires last 10% to 15% longer*
*Fewer shutdowns from breaks*
*Paper of uniform caliper is produced*
*Fewer lump and foam spots*
*More wire for sheet formation purposes is used.*

Let us tell you how the Voith Inlet can help you increase your profits. Complete details on request.

**VALLEY Equipment Includes**

*Beaters: Holland and Niagara*
*Deckers: Single and Double*
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*Screens: Flat and Rotary*
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*Machinery for Paper and Pulp Mills*

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to the consumers with bound samples of the various makes of bonds and writings and a treatise on "Making Paper Pay Its Way" in two bound forms.

### Franklin Paper Co. in New Field

With the new year, the Franklin Paper Company, 810 Sansom street, manufacturers of a varied line of leather substitute papers, announces the extension of its latest development to the manufacture of the improved dynamic speakers used by the radio trade. The new product has been under process of perfection for the past four months while a market has been growing for its usefulness among the largest radio manufacturers of the nation and those who produce the accessory dynamic loud speakers. This new dynamic speaker paper augments the line that was perfected for the cone loud speakers and has acoustic qualities specially adapted for the tonal volume of the dynamic. This paper meets the needs also of the most exacting electrical engineers. With the addition of several new leather designs, the Frankot Cover Papers for catalogues, books, and folders have been extended to a complete assortment of leather effects in a variety of colors, embossed and straight patterns.

### J. D. Zellerbach Returns West

Following a holiday sojourn in this section with a business call at the New York offices of the Crown Zellerbach Corporation, Vice President J. D. Zellerbach returned to the San Francisco headquarters of the Fibreboard Products Corporation. He is also president of the latter corporation which recently acquired the Federal Container Corporation of this city as its subsidiary and is planning other developments in conjunction with local business enterprises.

### Sabin Robins Paper Co. Expansions

Having enlarged the stocking facilities of the Philadelphia warehouses to meet expansions in business that have developed within the year, the Sabin Robins Company, 1028-30 North Delaware avenue, has also added to the sales forces to adequately handle the local distribution. While the local warehouses now carry a complete assortment of paper card board, over runs and job lots as well as seconds of mills output there are many additional grades added to the fine paper grades which are permanently stocked. John Ellis, formerly with the Garrett-Buchanan Company, and Philip Weidner, who recently severed his connection with Reigel & Co., Inc., now are devoting their services to the Philadelphia territory sales of the firm.

### John Baurle Ill

John Baurle, who is head of the paper division of the American Forest Products Company, 24th and Race streets, is confined to his home suffering from a severe attack of grippe.

## Dayton Outlines Safety Plans

DAYTON, Ohio, January 14, 1929.—Representatives of 15 Dayton industries attended a luncheon meeting the past week, called by the Dayton Safety Council, to outline plans for a comprehensive industrial safety program. Paper mill men are interested in the movement.

Steps were taken to form a permanent plant representative section of the local council which would hold meetings twice each month.

The governing board of the Dayton Safety Council and workers in the membership campaign also met at the Miami hotel to receive the latest reports. The city has been divided into four sections and groups will visit all manufacturers in the hope of obtaining a larger membership so that safety work in industrial plants may be advanced to the highest possible point.

## Does Not Buy Eureka Blank Book Property

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., January 15, 1929.—Gerald J. Judge states that the item regarding the purchase by the Kalo Company of the South Hadley Falls property of the Eureka Blank Book Company is untrue. "There has been no deal of the sort," he said.

## Conferences on Paper Standardization

An interesting series of conferences now being held in twenty-three key cities throughout the United States should go far to correct certain abuses in the paper industry. The primary object of these conferences, which are under the auspices of the Paper Users Standardization Bureau of Holyoke, Mass., is to convey some much needed information to executives in charge of purchasing paper.

Standardization of stock, says Robert C. Fay, director of the bureau, will insure a saving at both ends and ultimate satisfaction to the manufacturer and consumer.

It is interesting to note that the American Writing Paper Company, Inc., which is a sponsor of the Standardization Bureau, has exacted no promise or obligation of any kind from the six hundred companies for which paper tests have already been made. In fact, the Standardization Bureau conducts its tests absolutely free of charge and furnishes a card index desk file report following its investigation.

The form which standardization tests take depends upon the questionnaire which the paper user fills out. Firms may use as few as six forms, or as many as 12,000, the record number thus far. Each form is described minutely and samples are submitted. Various chemical and tensile tests then follow. Finally, recommendations are made.

Mr. Fay sums up the results of his work in this way: "We believe that standardization is bound to insure a saving because it will determine whether the various grades of paper cost more than is necessary or if too great a variety of grades is used. Almost invariably, the latter situation is found to be true. One of our recent investigations shows that 278 grades of paper were in constant use, while 15 would have sufficed.

Miss Helen U. Kiely, scientific director of the American Writing Paper Company, also addresses sessions of the various conferences. Miss Kiley presents 1,000 feet of absorbingly interesting film which illustrates every phase of paper manufacture.

The most recent conferences have been at Rochester, Buffalo, Cleveland, Chicago, New York, Albany and Philadelphia. Those scheduled for the immediate future are: Pittsburgh, William Penn Hotel, January 15; Baltimore, Emerson Hotel, January 21; St. Louis, Statler Hotel, March 6; Cincinnati, Sinton Hotel, March 8, and Detroit, Statler Hotel, March 12.

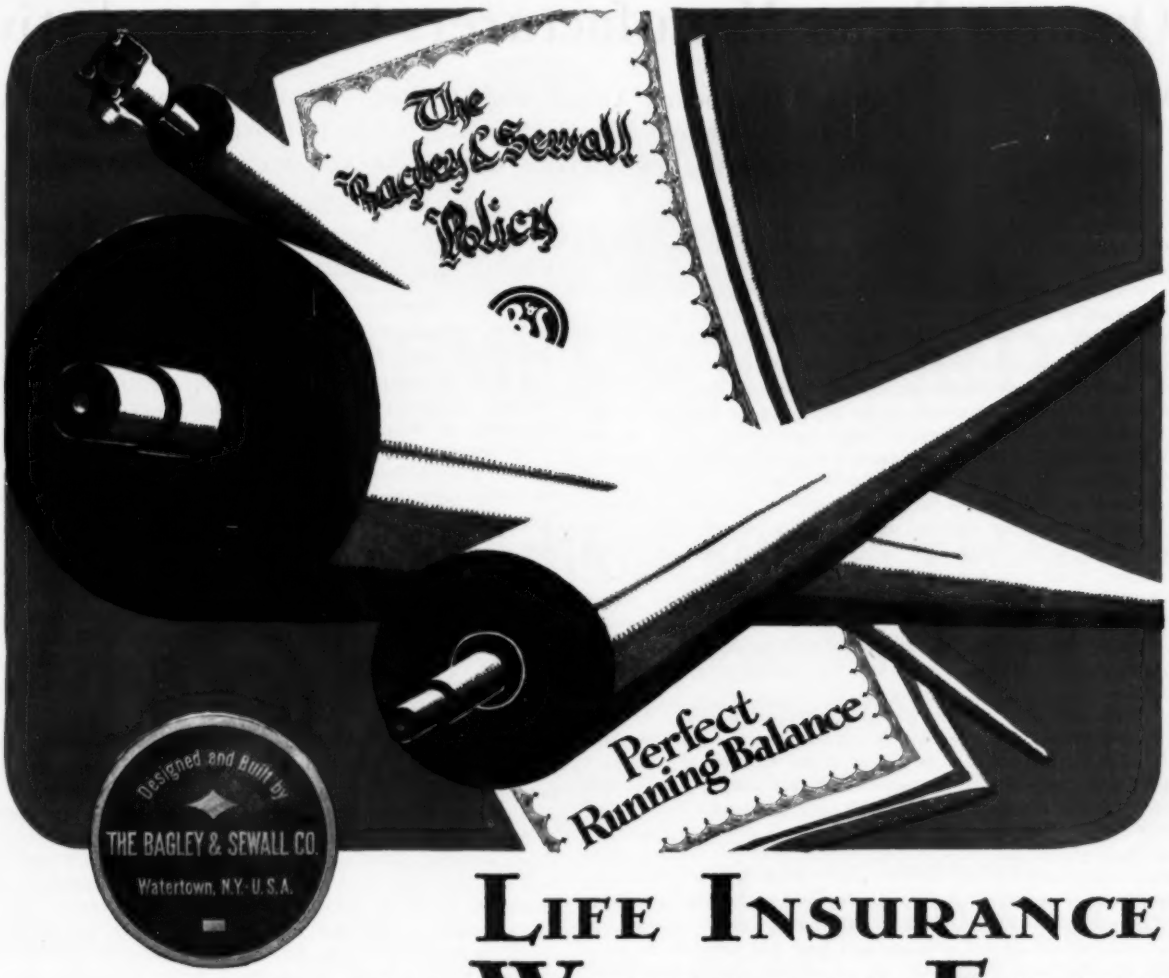
## Straw Board Men Meet in Indianapolis

Appointment of a committee of five members, each representing a grade of paper manufactured in Indiana, for the purpose of discussing problems of the industry and possible future legislation, was made at a recent meeting of strawboard manufacturers of Indiana and adjacent states. The meeting was held in Indianapolis.

Frank Shew of the United Paper Board Company of Eaton, is chairman of the committee. Other members are J. A. Curtin, Fort Wayne Corrugated Paper Company; O. Hedstrom, Hartford City Paper Company; W. G. Thomas, Lafayette Box Board and Paper Company, and E. A. Ball of the Ball Brothers of Muncie, Ind.

Organization of the paper board manufacturers into the committee is the first move in a campaign which is expected to end in prevention of the poisoning of Indiana streams by waste from paper board factories. Representatives of manufacturers from many parts of the country attended the meeting, which was held in the offices of Dr. William F. King, secretary of the Indiana state board of health.

The members present passed a resolution pledging support of the industry to the plan of the state board of health to ask for an appropriation for stream surveys. George N. Manfeld, representing the fish and game division of the department of conservation, was present. His department was interested in the meeting because of the danger to fish which exists in poisoned streams.




# LIFE INSURANCE for WIRES and FELTS

**Roll cost cannot be figured by the price on the invoice—wear and tear on wires, felts and bearings must enter into the figure. Bagley & Sewall makes rolls with this thought in mind...of brass, bronze, steel, aluminum—brass cased, rubber covered or mirror finished ...and every one *perfectly balanced!* Not merely static balance but an exact *running balance* that eliminates the toll of vibration and whipping—*specialized rolls* at a cost no higher than ordinary ones. And they save that cost again and again in performance and lowered operating and maintenance charges.**

**Write us for full details**

## The Bagley & Sewall Co.

**Watertown, N.Y.**

# Ontario Paper Manufacturers Continue Active

## Mills Making Book Papers Well Booked Ahead With Orders, Thanks to Heavy Consuming Demand—Bond, Ledger and Writing Plants Operating Close to Capacity—Board Mills Exceptionally Busy—Carton Interests Anticipate Another Good Year

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 14, 1929.—While paper selling has hardly got under way for the New Year as yet, there are signs of a brightening market and by the end of the month it is believed that a satisfactory degree of activity will be in full swing touching all classes and grades of paper and paper products. Paper distributors say the outlook for good business was never brighter than it is today and they base their belief on general business conditions and the mass of enquiry already received for stock to be delivered around the end of the month or the beginning of February to the printing, publishing and general paper consuming trades. A few of the wholesalers say that the transition period extending between the old and the new year yielded a fair amount of business but for the most part it must be said that most of the orders came in by mail or wire, for most of the travelers were off the road for a couple of weeks. They are out again now and are booking fair tonnages, with prospects of larger orders as the season advances. Fine papers are in firm demand, with wrappings and coarse papers generally somewhat less active than was hoped for at this period of the new year, while there is a good sale for all specialty lines, tissues, toilets and similar lines, and for waxing, grease proof and glassine.

There was little let up in manufacturing activity over the Christmas-New Year season and comparatively few of the mills closed down for overhauling. Most of the mills could not afford to take the time for renovations which they usually take at this season and so ran right through with only the regular two-holiday shut-down. There is a big demand from all consuming quarters for book papers and mills manufacturing them are booked ahead with orders well into the present year. Bond, ledger and writing machines are operating close to capacity and the light weight paper mills report sufficient business in sight to keep them running full for some weeks. Board mills are very busy and some of the paper box manufacturers report difficulty in getting prompt delivery of stock. The carton people are looking forward to another good year and the one just closed was one of the most prosperous in their history. The paper converting trade is active under a good call for envelopes, blank forms and general manufactured stationery.

### S. F. Duncan Elected President of Provincial

At a meeting of the directors of Provincial Paper, Ltd., at the head office in Toronto, a few days ago, S. F. Duncan, formerly secretary-treasurer of the concern, was elected president, succeeding the late I. H. Weldon, who died in Toronto a few weeks ago. The new president of Provincial Paper, Ltd., was associated with the late Mr. Weldon over twenty years ago in the old St. Lawrence Paper Mills, from which Provincial sprang and they jointly managed the concern since its inception, Mr. Weldon being the sales man and Mr. Duncan the mill man. Provincial Paper, Ltd., now have mills at Mille Roches, Que., and at Georgeton, Thorold and Port Arthur, Ont. At the directors' meeting Walter S. Barber, who for years has had charge of the Georgetown mill of the company, was elected secretary-treasurer of Provincial, succeeding Mr. Duncan whose step-up in the paper industry in Canada is a source of much satisfaction in the trade.

### A. P. McKinnon Gets a Promotion

A. P. McKinnon, widely known in pulp and paper circles in Ontario, through his connection with the St. Regis Paper Company, for whom he had charge of Canadian timber lands, has been placed in charge of all timber lands of the company, both in Canada and the United States. Up till this time, Carl B. Martin, secretary of the St. Regis Paper Company, was in charge of the timber lands in the United States. Recently Mr. Martin was transferred from the Watertown office of the company to the New York offices, hence Mr. McKinnon's enlarged territory.

### Power and Paper Plans at Port Arthur

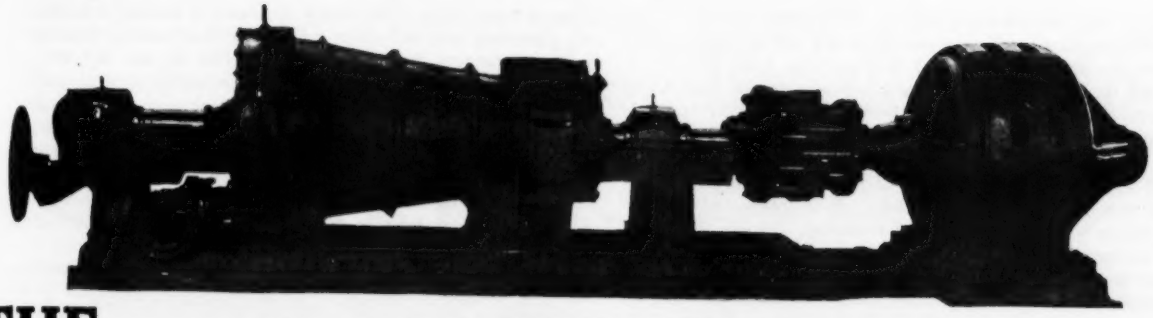
L. R. Wilson, managing director of the Abitibi Power and Paper Company, who was in Port Arthur a few days ago, stated that plans for future development of the properties at Port Arthur, recently acquired from the Consolidated Water Power and Paper Company of Wisconsin Rapids, Wis., by a Canadian syndicate, would be announced within a week's time. Mr. Wilson spent some time in Port Arthur inspecting the facilities. He announced that the other company included in the negotiations was the Canada Power and Paper Company, but he did not wish to divulge the amount of money involved in the transaction. Organization was not yet fully completed, Mr. Wilson said, and meetings would be held within the next week or ten days for the purpose of appointing directors and forming operating plans. In the meantime the new mill, which was erected at Port Arthur by the United States company in 1927, is running at capacity. It is understood that the plant, following the installation of new equipment, has a capacity of 250 tons daily.

### Sir John Aird on News Print Situation

Sir John Aird, head of the Canadian Bank of Commerce, at the annual meeting of that institution in Toronto last week, found "the dark spot on the horizon of the business situation in this country" to be "the over-production which has occurred in the pulp and paper industry. That an industry," he said, "in which more than half a billion dollars of capital is invested, which employs many thousands of people, and the products of which rank second in value among our principal exports, should be in an unprofitable condition through over-production and competition seems inexcusable. If for no other reason, the fact that one of this country's principal natural resources, the supply of which is strictly limited, is being sacrificed at bargain prices, because of over-production, should be sufficient to cause those responsible for this state of affairs to pause and to put forth their best efforts to remedy the situation without delay. It is satisfactory to see that the Premiers of both Ontario and Quebec moved promptly to seek a remedy, and it is to be hoped that the conferences which have been held will speedily put an end to this unsatisfactory condition of affairs. It does seem a pity that a lesson cannot be learned from the experience of European countries in this respect, and the administration of our forests be put upon a proper scientific basis which will provide for the utmost economic utilization of all forest products and their permanent production. This ought not to be a task of too great difficulty for the Governments of the Provinces principally concerned."

### F. N. Burt Co. May Be Acquired

Although Moore Corporation at present controls only Pacific-Burt, American Sales Book and Gilman Fanfold, it is believed that plans have been completed to take in the F. N. Burt Company, which operates paper box factories in Toronto and Buffalo, and manufactures sales books and business forms in Toronto. There was some surprise that the F. N. Burt Company was not included in the Moore Corporation from the beginning. The reasons for this exclusion were supposed to be that the F. N. Burt Company was the only one of the four which did not operate exclusively in the United States. There were obviously other reasons, but these have not been revealed. It is expected, however, that an offer to



# THE No. 2 EMERSON JORDAN

## *is equipped with*

## TIMKEN ROLLER BEARINGS

### *A New Epoch in the paper making industry*

**The No. 2 Emerson Jordan, shown above, is a masterpiece of refining equipment, having Timken Roller Bearings and Bandless Plug. This sturdy, well constructed bearing application is just another characteristic of Emerson Quality and progressive engineering.**

***Features to Consider.***

**(1) Timken Roller Bearings, both radial and thrust, are mounted on taper-bored sleeves.**

**(2) Bearings are enclosed in sealed housings that prevent the bearing troubles generally experienced when bearings are mounted directly on the shaft.**

**(3) Bearings are N O T mounted directly on the shaft.**

## THE EMERSON MANUFACTURING CO. Lawrence, Mass.

the F. N. Burt shareholders will be made within a few weeks. Moore Corporation certificates are ready and will be forwarded in a few days to the shareholders of the American Sales Book Company, the Gilman Fanfold Company and the Pacific-Burt Company, who have already deposited their shares under the terms of exchange. It is officially announced that the majority of the capital stock of the three concerns has been deposited, but there are still some shares in the names of brokers outstanding. Now that the new stock is ready for delivery, it is anticipated the bulk of the shares will be turned in for exchange. Papers for listing of the outstanding capital of Moore Corporation are in preparation and the preferred and common shares are to be listed on the Toronto Stock Exchange. Official estimate of earnings based on results for the first nine months of 1928 indicate substantial increases in the profits available for distribution on the common shares of the companies involved in the consolidation.

**To Announce Paper Prices Soon**

While it is impossible to gain any definite information from the Ontario news print manufacturers who have been and are still in conference over the situation in the industry, it is generally understood that an announcement of news print prices for 1929 is expected almost any day now. The news print men have been meeting more or less steadily for the past six weeks in an endavor to fix a news print price level which can be maintained during 1929. Publishers have been receiving their news print since January 1, but as yet do not know the exact price they will have to pay for their raw materials. During the past six months news print prices have been slipping and it is said that some publishers were obtaining their requirements at a $58 price.

**Pulp Restriction Stands**

The Dominion Government will continue its present policy of refusing to grant any further pulpwood concessions in Manitoba, Saskatchewan, Alberta and the railway belt lands of British Columbia for at least another year. This declaration was made by Charles Stewart, Minister of the Interior, last Friday in discussing conditions in the pulp and paper industry in Canada. Dominion jurisdiction over pulpwood concessions does not extend to Ontario, Quebec and the Maritime Provinces.

"I foresaw over-production coming over two years ago," Mr. Stewart said, "and declined then to grant any further permits for the erection of additional mills in Manitoba and the other western Provinces, although several applications were made to me to construct new mills and get more territory.

"The industry will simply have to wait until consumption catches up with production, and that will require a year or so. There is nothing to be alarmed about; and I have the utmost confidence in the future of the industry in Canada."

**Notes and Jottings of the Trade**

A number of the wholesale paper men in Toronto have enrolled in a short course in cost finding being conducted in Toronto by the cost committee of the Toronto Typothetae. Others have become connected with the Toronto Typothetae Sales Club which is an educational selling organization.

Paper Sales, Ltd., King street West, Toronto, have been appointed selling agents for the Detroit Sulphite Pulp and Paper Company, for Ontario and Eastern Canada. The Detroit company are manufacturers of complete lines of bristols, covers, tissues, waxing papers, specialties, etc., made of Mitscherlich sulphite.

S. Harvey Smith, of the Laurentide Company, was a business visitor in Toronto early in the New Year.

A visitor to Toronto paper houses recently was John Martin, of Provincial Paper Sales, Ltd., Winnipeg, who handle Provincial paper in the Canadian West.

With power to carry on business as pulp mill owners and general lumbermen, The Dominion Tie and Timber Company, Ltd., with an authorized capital of $40,000, has been granted an Ontario charter, with headquarters at North Bay, Ont.

Dr. J. L. A. Macdonald, technical director of the famous Tullis Russell Paper Mills at Markinch, Scotland, is visiting a number of the Canadian pulp and paper mills. Dr. Macdonald's outstanding work in practical chemical technology after the war has been no less effective than the developments of scientific control and the application of research to modern methods of paper mill operation. The distinguished visitor has been the guest of a number of gatherings held under the auspices of various branches of the Canadian Pulp and Paper Association.

Mr. Munro, of the Franklin Paper Company, Holyoke, Mass., manufacturers of bristols, blanks, etc., visited a number of the Toronto wholesale paper houses this week.

Frederick Hamilton, a member of the sales staff of the Dominion Printing Company, Ltd., and well known in paper circles in the city, was elected alderman for Ward 5 in the recent municipal elections in that city. Alderman Hamilton is prominent in sport activities and was manager of the Osler Baseball Club, last year's Ontario and Canadian champions.

Inland Printing House, Ltd., with an authorized capital of $100,000 and power to engage in the manufacture of paper as well as to engage in a general printing and publishing business, has been given Ontario incorporation. Toronto lawyers are mentioned as the provisional directors.

Fred G. Hunt, formerly connected with the Georgetown Coated Paper Mills lately absorbed into the Alliance Paper Mills, has been transferred from the latter division and will now handle fine papers for the Toronto office of the Howard Smith Paper Mills division.

A series of six public illustrated lectures on pulp and paper technology will be given at the University of Toronto during the next few weeks by T. Linsay Crossley, vice-president of the Industrial Laboratories, Toronto. Lectures in this field are given annually for the benefit of the engineering and forestry students at the University and are also well attended by others interested in the pulp and paper industry. Topics include mechanical pulp; sulphite pulp; sulphate and soda pulp; news print manufacture; fine papers, beating, sizing, paper machines; finishing mill control.

Foundations are completed for office, factory and warehouse units, and are now going in for the boiler room in the construction of the new plant at Leaside, Toronto, for the Corrugated Paper Box Company, Ltd. Plans call for a paper box plant comprising small office unit, single factory unit 200 by 700 feet, with adjoining warehouse 150 by 200 feet, also boiler room, 50 by 60 feet, to be concrete, steel, brick and metal clad construction.

## New Year Opens Well in Indianapolis

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 14, 1929.—The new year has opened up rather promising for the local paper industry. The volume up to the present time is not so large, but there seems to be an undercurrent of activity among the buyers that augers well for the first quarter. At least the situation is brighter than it was this time last year. The buyers while making many inquiries, are doing quite a bit of shopping around in the hope of procuring better prices.

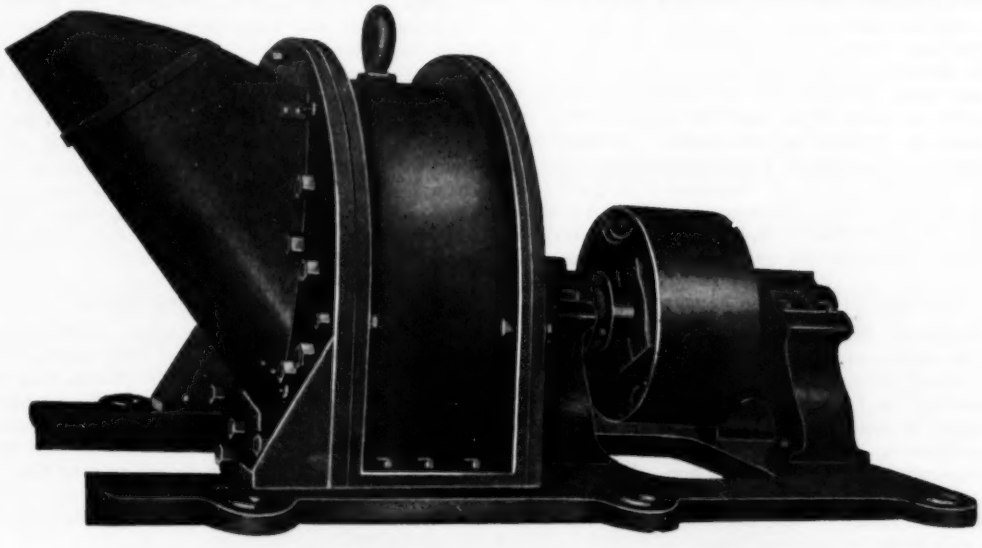
The local jobbers seem in a very favorable situation. Their stocks are not large, but are well balanced and jobbers are receiving favorable action from the mills in their effort to build up stocks to a somewhat larger level. Mill prices seem to be very reasonable.

The larger manufacturers using tapes, sacks and bags and heavier paper containers, are particularly careful in their buying and are careful generally to secure the best possible price. This, of course, takes much of the legitimate profit away from the business, but after inventory there was a disposition on the part of some to begin the new year with good sales.

Corrugated paper is selling well and from all indications will increase in volume.

Tissues and similar grades are in fair shape and the volume of sales is rather better than the trade expected. The local trade confidently expects the present year to show a gain over 1928.

# *For Breaking-Up*
# CHIPS AND REJECTIONS



## Carthage Chip Crusher

THIS crusher produces chips of uniform length without making sawdust or needles.

Chips enter the machine through an unusually efficient spout which is arranged so that it does away with any possibility of the machine's becoming plugged while in operation.

The Carthage Crusher is extremely simple in design and is of rugged construction. Has few working parts and is therefore easy to operate and to keep in repair.

It has a capacity of 15 to 20 cords an hour, depending upon the horsepower used. From 30 to 50 H. P. are required to operate it, depending upon the production desired.

Carthage Crushers, like all other Carthage Machines, represent more than 30 years experience in the manufacture of pulp and paper mill machinery.

*Write for our catalogue.*

**Carthage Machine Company**

*Manufacturers of Pulp and Paper Mill Machinery*

Carthage, N. Y. Belleville, Ont., Canada

# New England Paper Merchants Association

## Celebrate Twenty-fifth Anniversary at the Harvard Club Thursday Evening, January 10—Affair Is Attended by Representative Paper Men Throughout New England Including Many of the Former Presidents of Association—Arthur E. Ham Elected President

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 14, 1929.—Reminiscences, good fellowship, pleasant surprises, and a feeling of optimism in regard to the condition of the paper industry were features of the silver anniversary of the formation of the New England Paper Merchants Association held at the Harvard Club of Boston Thursday evening, January 10. A reception preceded the banquet, which was attended by about 65. Menus with silver colored covers at each place at the tables were appropriate and attractive.

Seated at the head table were A. W. Blackman, F. B. Cummings, A. M. Burr, R. M. Stone, E. H. Blackman, Frank E. Floyd, M. O. Byrne, K. S. Warner, A. E. Ham, C. A. Young, C. S. Proctor, J. D. Snell, H. L. Carter and C. A. Esty.

### President Byrne Greets Members

President Matthew O. Byrne, who was toastmaster, in greeting the members and guests, expressed appreciation of the large attendance and interest displayed in the association. Continuing, he spoke substantially as follows:

"This celebration is something we should be proud of—your twenty-fifth anniversary. I am exceptionally proud to be at the head of the organization at this moment. It brings back very dear dreams of by-gone days of twenty-five years ago. I suppose a lot here have been cub salesmen. I little thought then that the salesman of today may be the executive of tomorrow.

"In the twenty-five years since 1904 the association has covered itself with glory, but all the credit belongs to the past presidents of the association. No one, unless he lived in the atmosphere of 1904, can realize the trials and tribulations that confronted members of the trade then. We think we have our troubles, but they are no different from those of twenty-five years ago. When we look ahead twenty-five years, it's a long ways ahead. When we look back, it is only like yesterday. I want to pay compliments to the great men who have preceded me in this organization and laid the foundation for today. The beginning was a small gathering of men around a luncheon table to exchange ideas. That, as we see it now, was the proper step. Then came the educational program launched by the National Paper Trade Association throughout the United States. If it were not for that we would not be having this meeting now. So all honor to these men. All the present officers have had to do has been to help build up the association.

"I want you to feel that you have something more than a mere membership in an organization. I want you to feel that you are part and parcel of an industry of the United States. You have grown from a small coterie around a luncheon table to the present organization, all due to the splendid cooperation of paper merchants of New England. The New England Paper Merchants Association was formed for the purposes outlined on your menu.

"To establish closer business relations and to cultivate a spirit of harmony among the members of this Association.

"To maintain the present high standing of the trade and further its influence.

"To better regulate credits and to correct trade abuses.

"To consider and take action on matters of importance to the trade as they may arise."

"The New England Association has gone a step further in cooperation with the National Association to introduce and educate the paper merchants of New England in standardized cost accounting. I believe the day is not far distant when every paper merchant will introduce a standardized cost system."

President Byrne then read a few lines applicable to business methods which had been handed to him and he said he believed the young man who wrote them was in the room and that they were very apropos.

"One of the most satisfactory parts of my life has been the work I have done for this association. The credit for the work is not entirely due to the officers, but also to the members. I congratulate the members on the gathering here and will call on one who was a member many years ago, now an excellent merchant in New York City, not only in his home association, but also in the National Paper Trade Association. Kit S. Warner, vice president of the National Paper Trade Association in charge of the Fine Paper Division."

### K. S. Warner Speaks

Vice President Warner spoke briefly, largely in a reminiscent vein, saying that he made his debut as a salesman in Boston and for ten years worked under Frank S. Arnold, who trained him as a cub salesman. He recalled walking by the establishment of his first customer eight times before going in, and then did not sell to him. Later he sold a carload of bogus in Holyoke, afterwards receiving a telegram from Mr. Arnold to meet him in Springfield at the Kimball, where Mr. Arnold gave him one of the finest dinners he ever had. He acquired a lot of experience in his work for Arnold-Roberts.

After reading letters he had received in connection with the industry, Mr. Warner said: "We must not hold stubbornly to methods of the past, but adapt ourselves to modern methods. Our problems are mutual. We must stand together and in cooperation."

In introducing the next speaker, President Byrne said that it should not be necessary to make any remarks about the next speaker, who is "known and loved throughout the United States as executive secretary of the National Paper Trade Association. I know of no man in the United States who could fill the office better than Frank Floyd."

### Remarks by Secretary Floyd

Secretary Floyd spoke substantially as follows:

"I appreciate the privilege of being here and come as a stranger. I want to pay tribute to the association for the work it has done for the paper industry throughout the country. You and I cannot appreciate what that work is. The paper fathers of New England are the fathers of the National Paper Trade Association. You have seen many of them go to the Great Beyond. It has been my pleasure to know a few of them. You have known them all. They have left great influence.

"Since I have been with you, I have visited all the cities east of Denver and have been to all associations except two. The problems here are the same as in Denver or in Wichita Falls. I feel that the paper merchant is entrenched in a place from which he cannot be moved. The position of the paper merchant at the silver anniversary of your birth is the same as it has been in the last twenty-five years. The industry has gone ahead in leaps and bounds. Some time ago we could not have got twelve executives together. The paper merchandising business today is on a sounder basis than ever before. I do not know now of a single paper merchant who went in the red last year.

"There has been much talk about mergers and direct selling. We cannot do direct selling. What does the housewife know about the kinds of paper we sell? We must get our paper from the warehouse. We, of course, have our troubles, but we must find

**Your Paper Is Made In Your Beaters.**

# ask Mr. Natwick

**The Lincoln Pulp & Paper Company, Ltd., of Merritton, Ontario, have nine Dilts NEW TYPE Beating Engines, some of which were rebuilt from their old Beaters. They make book, bond, and high-grade specialties in one mill, rope and kraft in another.**

**Their NEW TYPE Beaters have been so satisfactory, they have handled the stock so much better than their Hollander Beaters ever did, and their performance in every respect has been of such value to them that the Lincoln people are staunch supporters of Dilts NEW TYPE Beater equipment.**

**We suggest you "Ask Mr. Natwick."**

**View of Dilts New Type Beaters in Lincoln Mill**

**We Can Rebuild Your Beaters to the Dilts New Type**

**Dilts**
**MACHINE WORKS, Inc. FULTON, N.Y.**
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**Your Paper Is Made In Your Beaters.**

out our cost and know what we are doing. The next decade will show that the industry is sound and that we can maintain the position we hold. There are many here who were not in the paper business when this association was formed. In my thirty-five years of business I have never felt that the industry was in a safer position than at present.

"The National Association is going to do all it can and it appreciates any service you can give it. You must give this office what you can and we will do our part. When I told your president I was coming he asked me to give you his high regards and state that he regretted he could not be here. I wish you all A Happy New Year and hope that at your next anniversary meeting you will all be here to answer the roll call."

President Byrne said, "We have listened with a great deal of comfort to the words of Mr. Floyd who has emphasized that his office was subject to every member. It is the easiest thing in the world to sign your name to a check and send it, but what is back of that check is what counts."

In the business meeting which then followed Secretary Floyd H. Blackman read the minutes of the last meeting, which were accepted. The report of Treasurer Charles A. Young showed a balance of $715.64 at the beginning of the last year. Receipts were $7,451.25, and payments $7,110.42, leaving a balance of $1,056.47 in the treasury, with all bills paid.

Other business transacted during the evening included the passage of an amendment to the constitution to provide for the membership of the retiring president on the executive committee.

After the business meeting, the toastmaster said:

"We have with us the ex-presidents of the association and I wish to extend to them the hearty congratulations of our organization."

Each ex-president was asked to rise as the secretary called the roll. Those present were Arthur M. Burr, Charles S. Proctor, Frank B. Cummings, Joseph D. Snell, Arthur W. Blackman and Hubert L. Carter.

On request from the president, members rose for a half-minute tribute to those who had died during the year: Frank W. Power, a past president, and Howard L. Blake.

### Remarks by Arthur M. Burr

President Byrne then called on Arthur M. Burr, the oldest living ex-president, who occupied the chair in 1906 and 1907.

Mr. Burr said: "This is a very pleasant occasion. I am not now a member, but for the last twenty-two years I have been merchandising and selling to you and feel very much acquainted with you all. I have been getting impressions of you tonight. These impressions are youth, force and confidence. Twenty-five years ago everyone distrusted the other." Mr. Burr touched on the beginnings of the association, noting that American pulp and paper men had a meeting and a dinner in New York at which J. E. Linde was present. Mr. Linde felt that the paper dealers were not getting what they ought, and that they should get together and so the first National Association was formed. "W. B. McQuillen came home and sent out invitations to which about twelve responded, eight fine paper dealers and four wrapping paper dealers. He was the father, but there was also a god-father, Tom Cook. We met in his private office and Bill tried to keep us together. It was only the affection for Bill and Tom that held us together. We tried to correct abuses." Mr. Burr noted the meetings later in hotels and the decision to have an annual meeting.

### Other Ex-presidents Speak

Col. Proctor, president in 1916 and 1917, spoke also of previous days of the association, intimating that much could be said about the past, referring to Arthur Burr, who had so much to do with the formation of the association. He recalled a paper read by Mr. Burr and knew of nothing which had a better analysis of conditions. Col. Proctor said that "as we get older we are apt to have some moments of sadness. No one now actively antedates me. Mr Burr is the only one living. In only twelve years almost all of my predecessors have gone. Their example was a good one in their earnestness and the interest they had in building up the association. We should carry on the same way as they did, and I can say, in the words of Ulysses, 'All of which I saw and part of which I was.'"

Frank B. Cummings, an ex-president, not now in the paper business, was called on as one from the stockyards. He said he had been a very excellent listener and recalled his training in the paper business under Mr. Arnold. As he recalled he was treasurer when Mr. Arnold was president. He said that they had trouble in getting checks, but thought that if they had ever had $7,000 in the treasury he would have stayed in the paper business. He was treasurer for eight years and thought that perhaps there was never more than $300 or $400 at a time in the treasury.

Mr. Cummings referred to the uses of paper twenty-nine years ago, saying that the only thing paper was a substitute for then was for collars. There is nothing that is a substitute for paper, but now paper is used for many things, such as aprons, plates, cups, and rubber. Mr. Cummings spoke of a beautiful raincoat made of paper which sold for twenty-five cents, given him by "Ben" Tracy.

An invitation was read from the New Haven Paper Merchants Association asking the New England Paper Merchants Association to hold the May meeting in New Haven, and this was passed to the secretary for his report.

### Report by President Byrne

Retiring President Byrne in his report said:

"During the past year that it has been my honor to be your president, I have tried to give faithfully and energetically my time to the New England Paper Merchants' Association. The membership in the association has increased by five members, due entirely to the activities of the membership committee. The year has brought together members of the wrapping paper division into closer relationship with each other. The bi-monthly meetings have been held faithfully and largely attended. The treasurer's work has been admirably done. I leave with you a parting message.

"You men are strong in Boston and surrounding territory, but the real strength should be in the outlying districts. You have membership in every state but New Hampshire. You realize that success in any enterprise lies in the success of the outlying districts, and we want membership outside of Boston. That is my hobby and you should work to bring in members in Western Massachusetts, Connecticut, Rhode Island, New Hampshire and Vermont.

"I thank the executive members for their cooperation and I also express hearty appreciation of the cooperation of members. The wrapping paper division in 1927 was certainly loyal to me and I step out of the association with regret, but I do so with heartiest wishes for the welfare of the association."

When Col. Proctor was called on as chairman of the nominating committee for the list of candidates, he moved that since no roster with names of members had been prepared since 1925, the secretary be instructed to prepare a roster with names and all new amendments. The motion was carried.

### Elections by New Members

When the following names of candidates were read, the secretary was instructed to cast one ballot for their election:

President, Arthur E. Ham; first vice president, Robert M. Stone; second vice president, W. H. Rourke; treasurer, John F. Kuster; secretary, E. D. Bement; auditor, A. H. Arnold; executive committee—Matthew O. Byrne, retiring president, Geo. D. Allen and Mm. J. McLellan of the Fine Paper Division and Leon Young and Walter Butler of the Wrapping Paper Division. Representatives to the National Paper Trade Association, Wm. B. Stevenson and Arthur W. Blackman.

President Byrne announced that Wm. B. Stevenson had been recently operated on for appendicitis and was glad to report that he was getting on well. The secretary was instructed to send regrets and flowers to the hospital, and on motion of Chas. A. Esty it was voted that the New England Paper Merchants "in session" send greetings to Mr. Stevenson.

# DU PONT *Dyestuffs*

## DU PONT
## *Metanil Yellow*
## *Concentrated*

For the faster to light boxboards and container boards we recommend du Pont Metanil Yellow Conc. Alone or shaded with du Pont Orange RO or du Pont Orange I I Conc. and du Pont Nigrosine WSB Powder the full range of yellow and brown shades may be produced.

Du Pont Metanil Yellow Conc. possesses excellent solubility. It is very economical when used as a calender color in the production of the current shades of boxboard.

**E. I. DU PONT DE NEMOURS & CO., Inc.**
***Dyestuffs Department***
**Wilmington Delaware**

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REG. U.S. PAT. OFF.

***Branch Offices:***

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**Boston, Mass.**

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**Chicago, Ill.**

**8 Thomas Street**
**New York City**

**Balfour Bldg.**
**351 California Street**
**San Francisco, Calif.**

**126–128 South Front St.**
**Philadelphia, Pa.**

**709 Hospital Trust Bldg.**
**Providence, R. I.**

**507 Northern Ontario Bldg.**
**Toronto, Ontario**

The incoming president, Arthur E. Ham, was called on to speak.

Mr. Ham said: "I greet you as my friends and hope to do so a year from now. I know all the ex-presidents personally and knew their energy and loyalty, but never realized what a president could do, until he had been associated with one as vice president. There was never a moment that President Byrne did not have the welfare of the association on his mind and I shall do my utmost to maintain the foundation built and add to it. What your president can do depends on what members can do for him. I am much gratified at the amendment and to know that Mat Byrne will be on the executive committee. I am also glad to hear from the new members and to have Col. Proctor a member as an authority on parliamentary law. We are engaged in an interesting and important business which has greater magnitude than many realize. I thank you all and I will do my best to live up to all the past presidents have been."

First Vice President Robert M. Stone said that Mr. Ham had voiced the sentiments of all the officers and that he would do his best.

Treasurer John F. Kuster and Secretary Edward D. Bement expressed similar sentiments.

Retiring President Byrne then rose and said: "This comes from the heart. I have never been called on to do this and it is certainly a grand pleasure. A young man came into the secretaryship of the association about seven years ago. He has given his time before and after business and I know the quality of work he has turned out. I know of no one more faithful than Secretary Floyd Blackman. He has been one real fellow. He has been gracious, courteous and 100 per cent efficient. Your friends have asked me to present to you this chair and rug and wish you long life and prosperity and want to thank you for cooperation.

Mr. Bement called three cheers for Floyd Blackman, which were given heartily.

Mr. Blackman, to whom the presentation was a complete surprise, in thanking the members for the gifts said that he had much recompense for his work, had made many friends and hoped he would keep them all.

During the evening handsome silver cigarette lighters, inscribed "1904-1929 25th Anniversary N. E. P. M. Assoc." were given to all present, and distributed by Retiring Secretary Blackman. Community singing was led by Ed Bement, accompanied by an orchestra.

Those present included the following:

Leon Young, J. N. Whitney, T. C. Casey, Harry B. Fleming, T. J. Lyons, E. D. Bement, W. J. McLellan, H. L. Carter, C. A. Esty, A. E. Crowell, F. H. Winter, Robt. H Welsh, Graham Blandy, Charles H Cronin, T. P. Ingalls, H. Hurlbert, J. A. Gledhill, Sam F. Ginsburg, Harold C. Scranton, W. H. Lippman, Fred A. Whittier, Stanley W. Steever, A. H. Arnold, H. E. Waite, Roger Hubbard, C. S. Hall, Nelson Martin, Geo. P. Allen, Nathan S. Clark, E. Bartser, C. L. Beckwith, Frank C. Catt, W. W. Binford, W. N. Stetson, Jr., Frank H. Merrill, Wm. Watt, Alden Watt, J. Herbolzheimer, James C. Murray, J. Kuster, J. S. Holleran, Bill Massey, John W. Wendell, Arthur E. Ham, Herbert C. Ham, A. Lawrence Ham, E. Porter, J. Vivian, Joseph D. Snell, C. S. Proctor, C. A. Young, M. O. Byrne, J. H. Blackman, Robert Stone, A. M. Burr, F. B. Cummings, A. W. Blackman, K. S. Warner, Frank W. Floyd, John J. O'Brien, Herbert A. Lindenberg, Carl Fowler and C. Frederic Wellington.

## Superior Paper Co. Reopens

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 14, 1929.—The Superior Paper Products Company, which recently moved its factory from Fairmount, Ind., to Marion, Ind., following a disastrous fire at the old plant, has begun production in its new quarters. The company before the fire, had ordered a quantity of new machinery which was ready to be shipped to the Fairmount plant. Immediately after the fire, the machinery was consigned to Marion and for this reason the company was able to begin production much sooner than ordinarily would have been the case.

## Asks Senate Inquiry on Foreign News Print

WASHINGTON, D. C., January 8, 1929—Carrying on his battle to bring about the utilization of farm waste products for the manufacture of news print, Senator Schall of Minnesota today demanded a Senate investigation of statements that a combination of foreign paper manufacturers have spent $16,000,000 to buy control of a chain of American newspapers and are planning to spend more for the same purpose in order to compel these papers to enter into long-term contracts to purchase foreign wood pulp paper.

The Senator quoted an article in *Editor and Publisher* as authority for his charge relating to the activities of foreign paper manufacturers.

Senator Schall expressed apprehension that "if such group should control many of the big dailies of this country they might have sufficient influence to prevent the passage of a bill to utilize farm wastes in the making of paper and thereby tend to place the publishers of the smaller newspapers at the mercy of the group."

Further in support of his charge, Senator Schall referred to a series of newspaper articles written by Blair Coan, described in the resolution as "a Washington newspaper correspondent" in which, the Senator said, it was suggested that foreign paper manufacturers were seeking to obtain fifteen-year contracts with American publishers to prevent paper made from farm wastes from finding a market when produced.

The resolution for an inquiry was referred to the Committee on Agriculture and Forestry.

## No Dumping of Finnish Pulp

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 16, 1929.—There is no dumping of chemical wood pulp on the markets of the United States from Finland and Estonia according to findings of the Customs Bureau. Frank Dow, Acting Commissioner of Customs has notified the Collector of Customs of the fact in the following communication:

"I inform you that the Secretary of the Treasury has decided that the results of the investigations made in Finland and Estonia of the purchase prices, foreign market values and related matters involved in the question of the dumping of chemical wood pulp imported from those countries do not justify the issuance of findings of dumping. The appraiser, has, therefore, been informed that appraisement reports need no longer be withheld so far as any question of dumping is concerned.

"The investigation in the case of importations of chemical pulp from Sweden, Czechoslovakia and Germany, which countries export considerable quantities of such pulp, has not been finished. You will be informed of the conclusion reached as to those countries."

## Kalamazoo Paper Co. Elects Officers

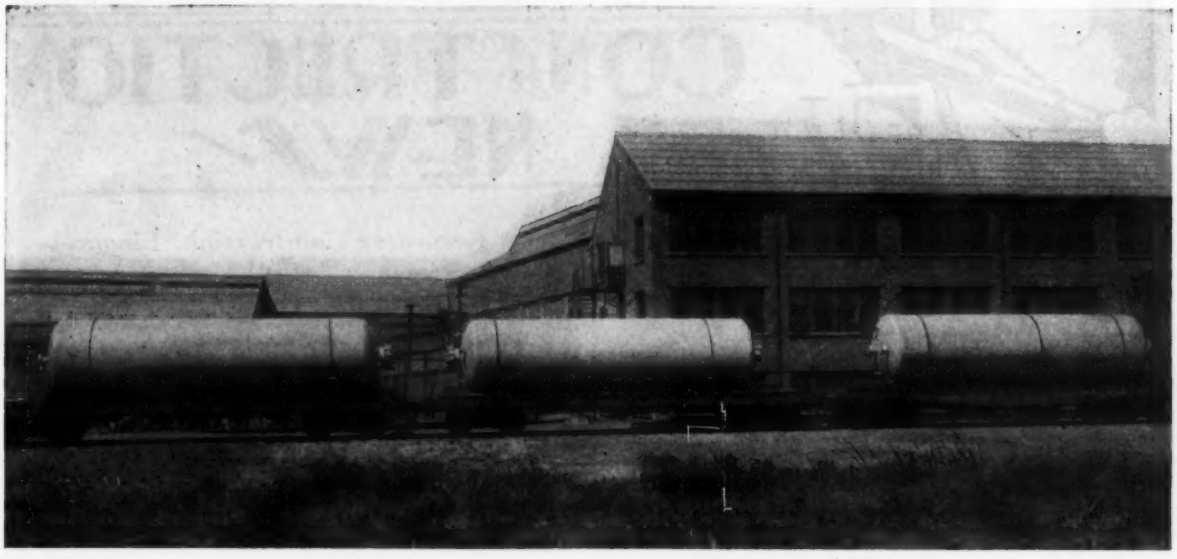
[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., January 14, 1929.—Officers and directors of the Kalamazoo Paper Company were all re-elected at the annual meeting, held Wednesday evening at the First National Bank and Trust Company. Those named are: President, F. M. Hodge; vice president, D. F. Altland, Detroit; secretary-treasurer, A. E. Curtenius. The officers and W. S. Dewing, C. S. Campbell, A. B. Connable, D. R. Curtenius and C. H. Kleinstuck comprise the board of directors.

## Corn Stalk Pulp and Paper at Kalamazoo

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., January 14, 1929.—A comprehensive display of corn stalk pulp and paper is being shown in the lobby of the Kalamazoo Trust and Savings Bank. Pulp is in dry state, also when ready for the paper machine. The paper is shown in finished and unfinished states.



# Kellogg Digesters *on the* Pacific Coast

THE three Kellogg Forge and Hammer Lap Welded Stationary Soda Digesters shown above were installed by the Cascade Paper Company.

These Digesters were built exactly in accordance with the A. S. M. E. Code for Unfired Pressure Vessels, and are good for a working pressure of 125 lb. per square inch. They are 8'0" I.D. x 32'0" long, and have a shell thickness of 13/16". They are complete with charging nozzle, blow nozzle, and all necessary steam and liquor connections.

Among Kellogg installations on the Pacific Coast are the following:

| | |
|---|---|
| Cascade Paper Company | 3 Units |
| National Paper Products Company | 3 Units |
| Crown Williamette Paper Company | 3 Units |

The M. W. Kellogg Company, 225 Broadway, New York

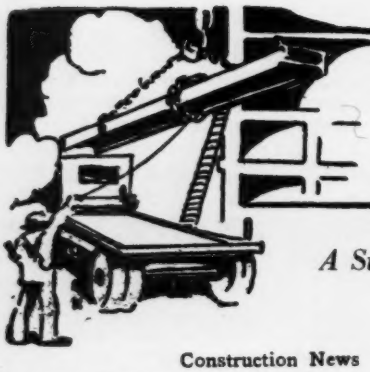
*Birmingham, Ala.—827 Brown-Marx Building*

*Boston*—12 Pearl Street *San Francisco*—2929 Harrison St.
*Chicago*—53 W. Jackson Boulevard *Pittsburgh, Pa.*—Oliver Bldg.
*Los Angeles*—742 Western Pacific Building

# KELLOGG

POWER PLANT PIPING — FORGE WELDED PIPE
FORGE WELDED CONTAINERS—RECEIVERS—SEPARATORS

ALL KELLOGG FORGE AND HAMMER WELDED PRODUCTS ARE INSURABLE



# CONSTRUCTION NEWS

*A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills*

### Construction News

**St. Louis, Mo.**—The F. J. Schleicher Paper Box Company, 1811 Chouteau avenue, is said to have preliminary plans under way for the construction of a new plant for manufacture of paper boxes and containers of various kinds, reported to cost more than $40,000, with equipment. F. J. Schleicher is president.

**Camden, N. J.**—The New Jersey Paper Manufacturing Company, foot of Elm street, has been carrying out an expansion and improvement program at its plant, including construction of a new power house; engine unit is being installed, with accessory equipment, replacing a machine which is said to have been in service for more than 50 years . The company will develop capacity production at an early date.

**East Walpole, Mass.**—Bird & Son, Inc., Washington street, manufacturer of roofing papers, etc., has awarded a general building contract to the Rowley Construction Company, 26 Central avenue, Pawtucket, R. I., for construction of proposed new addition to plant, recently reported in these columns, and superstructure will be placed in progress at once. It is estimated to cost close to $40,000. Work will also include betterments in present plant.

**Winston-Salem, N. C.**—The Old Dominion Paper Box Company, 22 Ninth street, Lynchburg, Va., has concluded negotiations for the purchase of the plant and business of the Carolina Paper Box Company, Winston-Salem, and will consolidate with its organization. The Carolina company will be operated as a division of the parent organization. It is understood that Winston-Salem plant will be continued in service and that increased output will be developed.

**Menasha, Wis.**—The Marathon Paper Mills have approved plans for construction of a new one-story plant unit, and general contract has been awarded to the C. R. Meyer & Sons Company, 50 State street, Oshkosh, Wis. Work will be placed under way at once. The structure will be used primarily for storage and distributing service. Estimated cost has not been announced.

**Newark, N. J.**—The Progressive Paper Box Company has been chartered with a capital of $200,000, to take over and expand the company of same name with plant at 341 Jeliff Avenue. It is understood that increased output will be arranged. The incorporators of the new organization are Lena, Mary and Budde Schiffenhaus; the last noted is company representative.

**Detroit, Mich.**—The Detroit Container Corporation, recently organized, has arranged for a new plant on South Harbaugh street, fronting on the line of the Detroit, Toledo & Ironton Railroad. A building has been taken over, comprising about 25,000 square feet of floor space, and facilities will be provided for an output of more than 300 tons of currugated shipping cases and boxes a month. It is proposed to begin operations at an early date. A. J. Mass is president and general manager of the new company, and will be in charge of production.

**Ypsilanti, Mich.**—The Peninsular Paper Company is running on full production schedule, giving employment to regular working quota, and reports a good volume of orders, more than at this same time a year ago. It is expected to continue on the present basis for an indefinite period.

**St. Louis, Mo.**—The Retzbach Patented Paper Products, Inc., recently organized by Edward J. Retzbach, St. Louis, and associates, with capital of $50,000, plans early operation of new local plant for the manufacture of processed paper products. Estimated cost of initial work has not been announced. Cuthbert Dixon, St. Louis, is also interested in new organization.

**Charleston, S. C.**—Interests identified with the International Paper Company, 100 East 42nd street, New York, have begun initial work on a hydroelectric power project on the Santee River, near Ferguson. The project will include construction of a power dam and generating plant at a place known as Pinopolis, the station to have a capacity of about 40,000 kw., divided into two generating units, and an ultimate output of close to 175,000 kw. The license for the development was issued originally to the Columbia Railway & Navigation Company, and recently acquired by the interests noted, includng Donald Hanley, vice-president of the South Carolina Timber Company, Charleston, and representative, it is understood for the International company. The latter organization is said to contemplate the construction of a pulp and paper mill in vicinity of the new generating plant. Murray & Flood, 869 Lexington avenue, New York, are engineers in charge of the project.

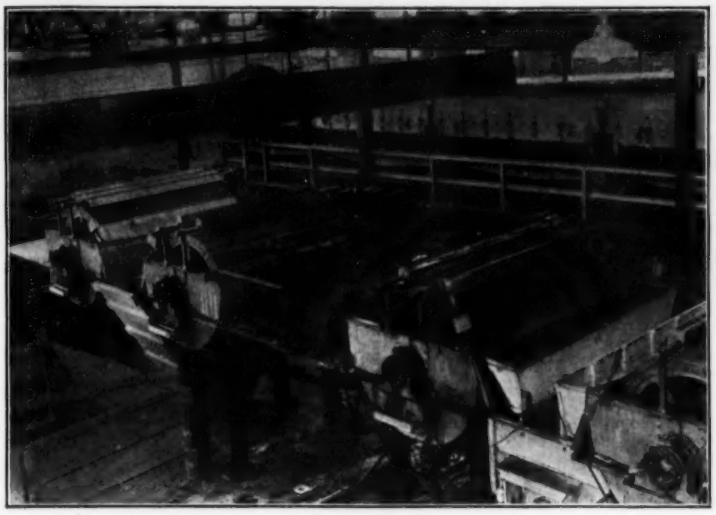
**St. Joseph, Mich.**—The St. Joseph Board and Paper Company is said to have plans in progress for the construction of a new mill to cost in excess of $300,000, with machinery, and is expected to proceed with project at an early date. The new unit will replace a structure destroyed by fire a number of months ago.

**Kalamazoo, Mich.**—The Sutherland Paper Company is reported considering additional plant facilities, to consist of new building and machinery for increase in present output. The project, it is understood, is in a preliminary stage, and tentative decision to develop larger output has been brought about through heavy booking of new business for 1929.

**Longview, Wash.**—The Pacific Straw Board and Paper Company contemplates a plant expansion program during the current year, and will have plans drawn, it is said, in the near future for new mill unit, reported to cost upward of $85,000, with equipment.

**Peshtigo, Wis.**—A protective committee for bondholders of the Peshtigo Paper Company has plans for a reorganization of the company, and it is proposed to operate the plant under the direction of the reorganized concern at an early date, developing full production for the manufacture of bond tissue and other paper stocks. Morris F. Fox, Milwaukee, is chairman of the committee.

**Philadelphia, Pa.**—The proposed new plant of the American Container Company, Shunk street near Swanson avenue, recently referred to in these columns, will be three-story, 65 x 200 feet, brick, and steel. Work will be placed in progress at once, and it is proposed to have unit ready for equipment installation early in the spring. Herman H. Kline, 709 Chestnut street, is architect.



Oliver Decker - Saveall Units in a Kraft Plant.

# Filters Used as Deckers are Stabilizers

ASIDE from the elimination of fiber losses—in itself vitally important—Oliver United filters used as deckers act as stabilizers.

The stock coming from the filter is very uniform in character regardless of fluctuations in the feed. This uniform consistency promotes better control at the machine chest.

The filter retains the finer fibers otherwise lost, thus providing a better machine furnish.

The machine can be speeded up because the sheet is better filled and more uniform.

And when the filters are used as combined deckers and savealls the entire mill flowsheet is under better control.

Oliver United filters, so widely used in paper mills, have unquestionably proven their worth as deckers — both ground wood and sulphite. Make your plans to install them in your mill as soon as possible.

## OLIVER UNITED FILTERS INC.

Successor to Oliver Continuous Filter Co., and United Filters Corporation

NEW YORK 33 W. 42nd St.

CHICAGO 565 W. Washington Blvd.

SALT LAKE CITY Felt Building

SAN FRANCISCO Federal Reserve Bank Bldg.

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# Obituary

### Raymond D. Bertschy

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, January 14, 1929.—Raymond D. Bertschy, 52 years old, president of the American Envelope Company, West Carrollton, and the Miamisburg Paper Company, Miamisburg, Ohio, and one of the most prominent manufacturers in the Miami Valley, died at the Miami Valley Hospital in this city last Tuesday afternoon, following a brief illness of pneumonia.

Mr. Bertschy had been in good health up to the time he was stricken with the dread disease that claimed a number of lives in this section of the country, following the epidemic of influenza which swept this and other sections of Ohio and Western states.

Prior to coming to this valley in 1914, Mr. Bertschy was president of the Fox River Paper Company at Appleton, Wis., and district manager of the Hammermill company.

He was identified with the West Carrollton envelope plant and the paper manufacturing company at Miamisburg which supplies the product for the envelope works, for a period of five years before being elevated to the presidency of both concerns.

Mr. Bertschy was prominent in all civic projects, and as a resident of this city, having resided at 230 Volusia avenue, Oakwood, always contributed liberally of his time, labor and finances toward the success of the Community Chest, a foundation for the support and maintenance of all charities and welfare work in Dayton, expending nearly $600,000 annually.

During his term as vice president of the Rotary Club he was active in the various public movements sponsored by that organization, as well. He was an active member of the Dayton Chamber of Commerce and always lent his encouragement and support to the welfare work in West Carrollton and Miamisburg.

Mr. Bertschy was born in Appleton, Wis., May 24, 1876, and obtained his early education in that city before entering the University of Colorado, where he took a mining engineering course. When a student he joined the Delta Tan Delta fraternity.

Surviving Mr. Bertschy are his widow, Jessie Bertschy; a son, Raymond, who was associated with him in business; a daughter, Jane, who did not return to Connecticut College, New London, following the holiday vacation because of her father's illness; and a brother, Perry Bertschy, now in Ecuador, South America.

He was a member of the Forest Avenue Presbyterian Church, the pastor of which conducted funeral services at Boyer's Mortuary on Riverview avenue, Thursday. Private services were held. The body lay in state for several hours and was viewed by many Dayton friends and associates in the paper industries, including employees.

The body was sent to Appleton, Wis., where burial was made.

### M. H. Parker

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., January 17, 1929.—M. H. Parker, president of the International Brotherhood of Papermakers from 1924 to 1926, and one of the best known members of the craft in the United States, died Tuesday night at a hospital in Toronto following a brief illness. His death was due to pneumonia which he contracted a few days ago. At the time of his death he was serving as second vice president of the Brotherhood and had planned to attend the annual session of the executive board held last week in this city. Mr. Parker first became an international figure in the paper making industry when he was elected president of the International organization in a contest with Jeremiah T. Carey. The election was stubbornly contested by Mr. Carey and a great deal of friction developed when it came to the official canvass of the votes, Mr. Carey carrying the matter into the courts.

Prior to being elected to the presidency of the Brotherhood Mr. Parker had served as one of the vice-presidents of the organization for nine years. Upon leaving Albany he returned to Baltimore and later went to Skaneateles where he was employed in one of the paper mills. He was also employed by the papermaker's and pulp workers' unions in organization work. He moved to Toronto a few months ago where he was employed up to the time of his illness in the plant of the United Paper Board Company.

Representatives of the Brotherhood accompanied the remains from Toronto to Harrisburg, Pa., where the funeral was held on Friday. Among the officials attending were M. J. Burns, secretary, and George J. Schneider and Frank P. Barry, vice presidents of the organization. The executive board of the International organization has the power to fill the vacancy caused by Mr. Parker's death and will probably act at once. Mr. Parker is survived by a wife, two children, two brothers and two sisters.

### Henry J. Wantland

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 14, 1929.—Funeral services for Henry J. Wantland, 39 years old, secretary of the Terre Haute Paper Company, Terre Haute, Ind., were held recently at the Masonic Temple there. The services were in charge of the Knights Templars. Mr. Wantland died in a Terre Haute hospital after a brief illness . He had been in rather poor health for some months, but was able to perform his official duties with the paper company. About a week prior to his death, he underwent an operation and was unable to rally when complications set in. He was a prominent figure in industrial, civic and fraternal circles of his home city. He had been associated with the paper company for twelve years. He is survived by the widow, one son and his mother.

### Thomas E. Allen

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 8, 1929.—Thomas E. Allen, general agent of the Monroe Felt and Paper Company, Lawrence, Mass., died suddenly in his office at the plant yesterday morning. The medical examiner stated that Mr. Allen was probably the victim of a heart attack. Mr. Allen, who was about 60 years old, was very well known among manufacturers and was prominent as a Mason. He entered the service of the Monroe company as a boy. His residence was at 1 Union street, Andover, Mass. A wife, Grace Towne Allen, a son, Norman, of Andover, and a brother, James E. Allen, a prominent Lawrence architect, are living.

## No Change in John A. Manning Offices

James F. Adams, general manager of the John A. Manning Paper Company of Troy, N. Y., writes:—

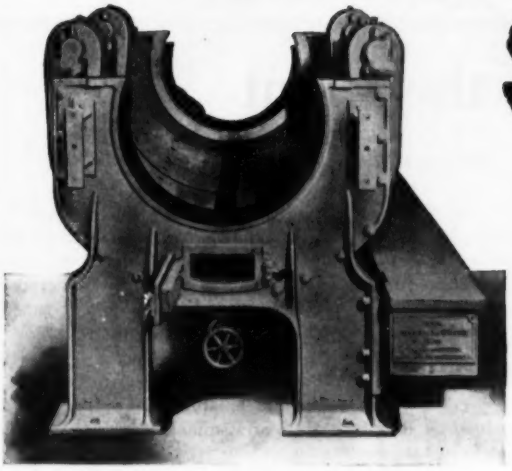
"On page 44 of your January 3 issue there is an item entitled "Paper Men Interested in Green Island Bank," which makes a wrong statement in the last paragraph. The statement is: 'The offices of the Manning Paper Company, formerly located in the structure, were recently removed to a new office building in Watervliet.' We would like to have this corrected at once, as it may lead persons coming to call on the John A. Manning Paper Company, Inc., to go to the wrong office, at great inconvenience to themselves.

"The John A. Manning Paper Company, Inc., has for years leased office space in its Green Island office building to what was formerly known as the Manning Abrasive Company, Inc., now the Behr-Manning Corporation. The latter corporation has its factory in Watervliet, and has recently built an office building so that all of its activities could be carried on at the same point. The space released by the Behr-Manning Corporation moving to its new office building in Watervliet was offered to and accepted by the Green Island Bank. The change, however, has not in any way affected the offices of the John A. Manning Paper Company, Inc., which are still located as heretofore, at 68 George street, Green Island, post-office address, Troy, N. Y.

"There is no corporate connection between the John A. Manning Paper Company, Inc., and the Behr-Manning Corporation, although John A. Manning is president of both companies, and F. E. Gallagher, vice-president."

# "M & W" Rotary Screen

## *with important new features for "ideal" screening*



View of Rotary Screen with cylinder removed. Note divided diaphragms, large openings.

Every one of these points has been considered in building the "M & W" Rotary Screens now being placed on the market.

Recent improvements are fully covered by United States and Foreign Patents.

*Write for New Screen Booklet*

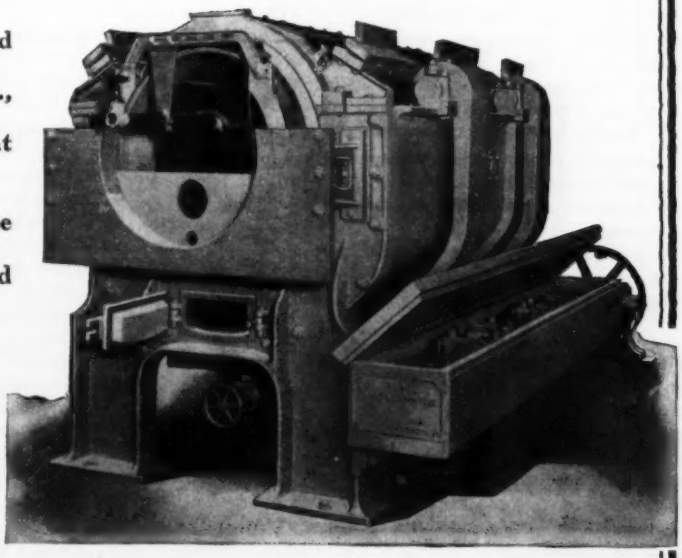
### TO PAPER MILL MANAGER:

**Here is a list—compare it with your mental picture of what you would consider "ideal" screening for your paper mill—**

1. Quick removal of dirt.
2. Large capacity.
3. Minimum power, vibration and wear.
4. No possibility of lumps, etc., working into screened stock.
5. No pockets or dead spots in vat or cylinder.
6. Dependable lubrication.
7. No possibility of oil or grease getting into stock.
8. Quick, visible washing up and oiling.
9. Screen plate slots always open.
10. Quick changing of screen plates.
11. No shutdowns of paper machines due to screen repairs.

*Or, to put it another way—*

*(A) ability to produce clean stock continuously*
*(B) quick changeover when wanted*
*(C) reliable operation at low cost*



Note enclosed and accessible main drive, shower pipe, washout door for cleaning.

THE MOORE & WHITE CO.
PHILADELPHIA, PA.
N. PHILA. STA. PENNA. R.R.
PAPER MILL MACHINERY

# Power Plant Section

## Reducing Power Costs Through Unit Treatment

Conducted by REGINALD TRAUTSCHOLD, Consulting Engineer

# Modernizing the Plant

### Lubrication and Lubricants

The output of a paper plant literally floats through the mill on a film of oil. It travels at a rate of say 1,000 feet per minute, 10 to 12 miles an hour, day and night, and not only is quantity of production dependent upon the maintenance of an unbroken film of lubricant, but quality of product and to quite an appreciable extent even the cost of production. This is no extravagant statement, nor is the following: that the collapse of the lubricant film, in a news print mill traveling, the paper, at 1,000 feet imposes a minimum loss of about $1.25 per minute. Lubrication, in fact, plays such an important part in present day economical operation of pulp and paper mills that no establishment can now afford to disregard the vital nature of correct lubrication in the attainment of maximum output of the proper grade of product at minimum cost.

#### Quantity Production

Quantity production is made possible only when the mill as a unit operates at continuous and uniform speed. The various machines are interdependent and even the temporary shut-down of a single machine or machine accessory is a serious matter, in that it has a bearing on the production of all the other machines. A variation in speed, likewise, is a matter of concern, for it may result in breakage of paper, causing loss of both material and of costly time, the measure of mill production. The attainment of continuous and uniform speed is very largely a question of correct machine lubrication, for correct lubrication minimizes the power required for driving the machines and accomplishes much in the way of keeping both power consumption and speed uniform.

Irregularities in speed due to varying belt slippage are largely eliminated by correct lubrication and as it is these irregularities which constitute the chief limitation on increased machine speed, such control does much to permit the attainment of high rates of production. Furthermore, since correct lubrication also eliminates hot bearings and excessive wear, it greatly reduces the frequency of shut-down from these familiar sources of trouble.

#### Quality of Product

The quality of the paper product is also very closely dependent upon uniform machine operation, for irregularities of speed impose fluctuating strains upon the paper. Worn bearings, occasioned by poor lubrication, are the chief causes of such strains, the damaged bearings or scored shafts setting up irregular motion and vibrations. A table roll becomes inoperative through an overheated bearing, for instance, and the chances are that a flat spot is worn on the shaft. When the roll starts up again, a periodic jar of the wire develops and material damage to the paper may result.

Another quite common cause of damaged paper is traceable to dirty felts which have become smeared with lubricant. Of course, it is not always possible to keep the felts immaculate, but a suitable, correct, table roll lubricant can be washed from the felts with comparative ease, while an unsuitable one may not be readily washed out. Incidentally, the annual cost of felts is ten or twelve times as great as that of correct and suitable lubrication.

These obvious and quite familiar burdens imposed by faulty lubrication are reflected, it is quite plain, in the cost of production and influence the overhead in machinery investment, labor costs, power consumption and the expenses for raw materials. These are the principal items which enter into the cost of paper making and they are all affected by faulty lubrication.

The machinery of the paper mill represents a very large investment of capital, imposing interest and depreciation charges against the product which amount to a large part of the cost of paper production. The realization of a suitable return on this investment necessitates the continuous, productive operation of these machines at their full capacity for long periods. Anything which interferes with this must be eliminated so far as possible. Also, one of the chief causes of equipment depreciation is friction.

Friction, by wearing out machine parts, precipitates repairs and renewals which appreciably add to the cost of paper making. It also augments the tension of wires and felts, materially reducing the useful life of these essentials, imposing costly interruptions for their replacement, etc. These delays all decrease the productive return from the machinery investment and increase to an even greater extent the cost of production. Friction also shortens the life of all machinery, accelerates depreciation and, consequently, adds still further to the cost of producing the finished paper.

Another major item of cost is that of belting upkeep, at least in many mills. The smearing of belts by oils and greases applied to adjacent bearings and gears causes the decomposition of the belt material and augments belt slippage. This entails considerable attendance labor for adjustments and hastens belt wear. Economical methods of lubrication and the use of suitable lubricants do much to protect the belting from such abuses.

Correctly lubricated machines, free from worn parts and with the belting in good condition, can also be handled with much less labor than machines where the faults of poor lubrication have exerted their toll. The substitution of automatic devices for manual attention to the application of oils and greases cuts down the operating expense of the mill.

Power is still another of the major cost items which is materially benefitted by correct lubrication. The waste of power consumed in combating unnecessary friction is greatly curtailed and the power not consumed in productive work is not only conserved, but is prevented from causing the destructive wear on machinery, which is the price exacted by friction.

The saving thus effected in labor and power may readily run into a considerable amount. In one mill, in which former lubrication ills were corrected, the babbitt annually employed for relining bearings was reduced from 9,000 pounds to about 3,000 pounds. In addition, the services of two men, formerly engaged exclusively in repair work, were released for other duties around the plant.

Even the consumption of raw materials is influenced in no small measure by the suitability of the lubrication service. Break-downs are usually traceable to faulty lubrication and every time a "broke" occurs, a considerable loss of raw materials results, for repulping

## *The Finest Raw Materials*

Quality goes through and through in the manufacture of Diamond 58% Soda Ash. The various raw materials are selected for their individual quality with the most meticulous care.

At every important stage of manufacture a corps of expert chemists concentrate their skill and knowledge in safeguarding the quality of Diamond Alkalies. The result is a product which has gained a national reputation for its unvarying purity and uniformity.

# DIAMOND ALKALI COMPANY

Pittsburgh, Penna. *and Everywhere*

the broken web entails not only direct waste, but quite frequently the loss of much of the finer fibers.

Finally, *soft nose rolls* and the like represent another source of waste which is often directly traceable to inadequate, or faulty, lubrication. Such losses are caused by misalignment of the rolls in the calender stack and by defective lubrication of roll bearings, which cause heating and uneven expansion, producing unequal pressure on the roll surfaces. The effect of this unsatisfactory condition is that not infrequently the ends of the finished rolls of paper have to be trimmed off and repulped. The finished roll is narrower and less valuable.

Maximum quantity production, high quality of product and low cost of production are, hence, dependent largely upon continuous, uniform operation of the functioning machinery, upon correct lubrication and suitable lubricants. To that extent to which perfect machine operation is not realized because of improper lubrication, all of the cost items will be increased to greater or less extent. The result is invariably a wide variation in the cost of manufactured paper.

### Lubrication Costs

The expense item of actual lubrication, lubricants and labor, is relatively small, moreover, as compared with other operating costs, and is quite an insignificant part of the total production expenses. A further commentary is that correct lubrication entails a smaller expense than faulty lubrication. That is to say, the lubrication cost per ton of paper produced is less if the correct lubricant is employed and properly applied. Experience wherever real improvement in lubricating practice has been attained bears this out.

At a prominent news print mill in Canada a few years ago, the lubrication cost for the entire mill was 29 cents per ton of finished product. As this expense was considered somewhat high by the management, in view of the fact that the machinery and equipment was modern and fairly well supplied with automatic oiling devices, etc., a lubrication expert was consulted, the suitability of the various grades of lubricants employed carefully checked and an employee of the mill assigned to the single task of minimizing waste. As a result of adopting the recommendations advanced by the specialist and making some changes in the methods of lubricant application, the lubrication cost for power, pulp production and stock preparation per ton of finished paper was reduced 33 1/3 per cent. In the machine rooms, the saving effected was even greater, over 50 per cent., and the total cost of lubrication for the entire mill per ton of finished product, including the wages of the employee assigned to the work, was cut to 16 2/3 cents, a reduction of over 42 per cent. In dollars, this represented an annual saving in the neighborhood of $11,900.00.

At the same time this reduction in lubricating expenses was effected, the annual costs for felts, wires, belting, repairs and maintenance in general were substantially lowered. Even this record is not infrequently bettered, particularly in the United States where the price of lubricants is ordinarily lower than it is in Canada. One prominent producer of quality lubricants sets low averages as follows: For the production of pulp, $0.03 per ton of finished paper; for paper stock preparation and power combined in the machine rooms, $0.06 per ton of news print paper, $0.11 per ton for all other grades of paper and about $0.05 per ton of finished product for paper board.

REDUCTION IN LUBRICATION EXPENSES[1]
CANADIAN NEWS PRINT MILL

| | Before | After |
|---|---|---|
| Pulp, power and stock | $0.06 | $0.04 |
| Machine rooms | .23 | .11 |
| Salary of employee | .... | .017 |
| Total for mill | $0.29 | $0.167 |
| Net annual saving | .... | $11,900.00 |

[1] The Texas Company.

### How to Reduce Lubrication Costs

To many mills, savings of an order such as these figures indicate should be of considerable concern and the question naturally arises of how to go about effecting such reductions. An inexpensive procedure, one which is almost certain to pay for itself even in the first steps, is substantially as follows:

Stop wastes first of all. A qualified individual should be assigned to the task of supervising the application of all lubricants and systematically recording all pertinent statistics. Only by instigating such fact finding activity can the existing situation be brought into the limelight. In a mill of any size, this will occupy the entire time of the appointee. Almost invariably, he will discover extravagances, minor and substantial, which are easily rectified and will earn his salary many times over. Even though no flagrant instances of waste are discovered, the maintenance of records alone, systematically and consistently, will serve to stabilize and instigate practices of an economical nature.

The second step should be the installation of inexpensive automatic lubricators on hand oiled bearings, wherever feasible, and on plain bearings which may be lubricated by hand application of grease. Hand application of oil or grease is usually quite inefficient and very apt to be exceedingly wasteful. On the other hand, automatic lubricators, attended to regularly on an established periodic routine schedule, insures relatively economical operation, at least about the best that can be effected with the existing equipment and lubricants.

Coincidently, records of oil and grease consumption will provide the exact figures regarding the cost of lubrication, against which should be charged as credits or debits variations in power consumption, in wear and maintenance accounts, in time and labor charges, effects in uniformity of operation and in quality of product, output and in unit overhead burden. In short, a veritable audit of lubrication expenses as contracted. If the full benefits of correct lubrication are to be secured in any mill, such an audit is essential sooner or later and the sooner it is instigated the quicker will be secured the lubrication dividends which may be realized in every pulp and paper mill.

When the evidence has been brought to light is the time best suited to strive for new economies and attainments in lubrication, assuming, of course, that the current lubricating practice is not palpably faulty. Consistent progress at minimum cost demands all the facts and if conditions are not flagrantly bad it usually does not pay to go far in shifting from one lubricant to another or to make radical changes in lubricant application until all pertinent information is in and has been properly analyzed. Correct lubrication has now been resolved to a near science and the individual mill should not set itself up as an experimental station for a hit or miss approach of empirical nature in solving its lubrication problem.

With full knowledge of existing conditions, the suitability of the various lubricants employed should be verified and whether the specifications are correct for each bearing and whether lubricants of the requisite quality are in use should be ascertained. This is a task for a specialist, one not only familiar with all available lubricants and their behavior under various conditions, but one who is in close touch and alive to the constant progress made in the production of lubricants.

The problem of lubrication application is also entailed, in the regulation of lubricant consumption and in checking provisions for the elimination of waste. A lubrication audit by the specialist is required, in effect, to check with the audit by the mill engineers. The lubrication balance sheet, periodically checked, is a most valuable accounting document and one which should be painstakingly maintained, for progress in lubrication is as consistent and marked as developments in almost any other line.

### Selection of Correct Lubricants

It would be very desirable, doubtless, to propound here a list of correct lubricants for the many and diverse requirements of pulp and paper mills, but it would not be wise to do so without knowing all the conditions pertaining to each application. This does not mean that concrete advice of this character cannot be

# OXFORD
## PAPER COMPANY

## PAPERS OF SUPERIOR QUALITY

OXFORD SUPER CALENDERED BOOK

OXFORD ENGLISH FINISH BOOK

OXFORD LITHOGRAPH

OXFORD TABLET

OXFORD POLAR COATED

OXFORD NORTH STAR COATED

OXFORD DULL FINISH COATED

OXFORD FOLDING COATED

EXECUTIVE OFFICES
200 FIFTH AVENUE
NEW YORK

secured, but is rather a case of where a little information may be a dangerous and costly thing.

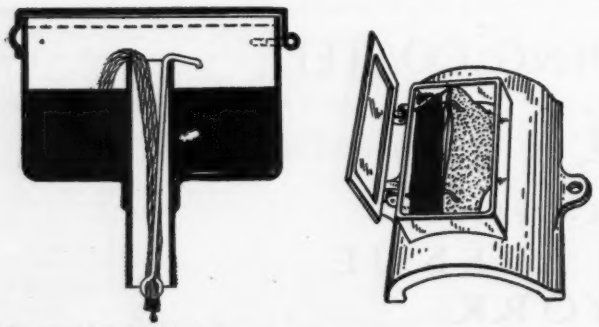
It is quite common practice for the producers of quality lubricants to market their various products under trade names. This is done not so much to conceal secrets of composition and specifications from rivals in the lubricating field as it is for the protection of the users of the lubricants, the customers of the producing companies. It would take more than the designation of a lubricant by a trade name to confound the analytical chemist of a competing producer. If one oil company can produce a lubricant which it may designate as *"XYZ,"* it would be no great problem for a rival concern to put out a brand labelled *"ABC"* which would be identical in all respects. The specifications are withheld from the public and the commercial user for the simple reason that altogether too many factors are involved for the uninitiated in the science of lubrication to be able to buy lubricants with reasonable understanding.

The body, or fluidity, of the oil is of concern, its adhesiveness, its ability to emulsify with water or to resist emulsification, quality considerations, specific gravity, flash, fire and cold test characteristics, viscosity, etc. With such a formidable list of requirements, and there are still others, which are all factors to be weighed and established in the production of a lubricant for a definite service, it is obvious that the lubricant purchaser would be hard put to it to designate his requirements, particularly as a variation in the potency of any factor may readily alter the complete character of the lubricant. The trade name designation goes a long way to avoid these complications and dangers.

Nevertheless, a few general remarks concerning suitable classes of lubricants, both oils and greases, which should be in the store rooms of the average pulp and paper mill for services exclusive of that demanded for the equipment of the power station may well be made. Detailed specifications will not be advanced, however, simply brief notes of quite general character.

For use on shafting and general machine bearings subjected only to moderate pressures and temperatures, without the presence of water or other particularly severe or special conditions, a medium-bodied, high grade mineral oil is eminently suitable. If temperatures fall below normal, a somewhat lighter bodied oil should be substituted. Where the bearings are subjected to high temperatures or heavy pressures, where dry conditions pertain, a heavy-bodied mineral oil is called for and the higher the temperature or pressure the more viscous should be the oil.

Where bearings are subjected to exceptionally heavy pressures or to the action of water, a heavy-bodied, compounded oil should be employed. Such an oil, under wet conditions, will form a rich emulsion, resist the washing action of the water and form a lubricating film of great tenacity. As a general machine oil in places where the application of the lubricant cannot be well controlled and the use of the oil thus necessarily is somewhat wasteful, a heavy-bodied mineral oil of intermediate grade is to be recommended. Such an oil lends itself readily to the requirements of chain, wire rope and cable lubrication. It is easily applied and



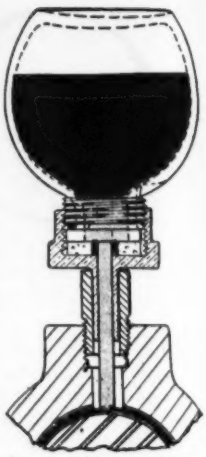
*Courtesy: Vacuum Oil Co.*

FIG. 1

**Wick feed oil cup of correct design. Wick feed box for journal dryers.**

should posses good penetrating as well as staying qualities. If high temperatures or heavy bearing pressures exist, an extremely heavy-bodied mineral oil of similar grade and general characteristics should be used.

For coating the teeth of open gears, pinions and sprockets, lubricants for hot and cold applications should advisedly be provided. The suitable product for hot application should be a very viscous and tenacious lubricant. For cold application, the lubricant should be of more tackey nature, which will adhere to open gears and properly coat the teeth. A heavy gear lubricant suitable for slush pan application to open gears or where an extra heavy-bodied lubricant is required to withstand heavy and shock loads should also be kept on hand.



*Courtesy: Vacuum Oil Co.*

FIG. 2

**Bottle Oiler.**

As for the greases proper, three general varieties should be in the store room of every pulp and paper mill. A cup grease of medium consistency will usually care for ordinary grease cup application and for open grease-packed bearings which are not subject to high temperatures or the action of water. A tallow compounded grease in soft, medium and hard consistencies should be used on bearings subjected to water. The medium grade grease will ordinarily suffice, but for extreme conditions the grades of soft or hard consistency may be called for. Finally, a heavy-bodied special grease should be provided for the lubrication of large bearings subjected to considerable heat, service for which the heavy consistency grease may sometimes be applied to advantage in company with wool waste, the waste thoroughly saturated with the grease.

### Lubricant Application

While the first requisite to correct lubrication is the selection of the right lubricant, the application of the lubricant to the bearing surfaces is of almost equal importance. Hand oiling being always wasteful and often failing to deliver the lubricant to the place where it is required, automatic devices for caring for the application of the lubricant should be installed wherever feasible and the lubrication made automatic so far as possible.

The usual methods by which automatic lubrication is accomplished in connection with pulp and paper making equipment are as follows: oil bath, circulation, splash, ring, chain or collar oiling, and the use of drop and wick feed oilers, bottle oilers and absorbent roll oilers. A description of these various methods is hardly necessary, for they are one and all quite familiar, but a few remarks concerning two or three of the simplest devices for the semi-automatic application of lubricants will not be amiss.

For example, wick feed oilers are extremely simple and have had very wide application in pulp and paper mills. These devices insure continuous, uniform delivery of oil to the bearing and possess the further advantage that the oil is filtered as it enters the bearing. The cleanliness of the lubricant supply is thus assured and this may mean much. These lubricators, operating by capillarity, are of many types, including the absorbent roll oilers which are admirably suited to application on beater journals; the popular wick feed oil cup of many uses; multiple wick feed oilers such as efficiently discharge the service of lubrication on machine calenders; wick, tray and pad oilers which function well on dryer bearings; and the wick boxes also of many applications.

The bottle oiler is another of the simple devices which is well deserving of mention, for within the range of its application, it is one of the most reliable and economical means of feeding oil automatically to bearings. It consists of an inverted bottle for the accommodation of the oil with its neck restricted by a metal rod, or spindle, which rests on the journal. As the journal re-

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volves, irregularities in its motion impart a slight movement to the spindle, causing a very slow feeding of the oil.

The choice between the use of bottle oilers and wick feed oilers depends in large measure upon two considerations; first, upon the relative convenience of the application of the one or the other; and second, upon the amount of lubricant required for the bearing. Bottle oilers are usually the more suitable for the service of lubricant application to shafting bearings and to small plain bearings which were originally constructed for hand oiling. Wick feed oilers, on the other hand, are generally employed for the services commanding a more copious feed of oil, such as in connection with the lubrication of journals on the large heated dryer bearings, beater bearings, etc.

The application of grease is accomplished as a rule by grease cups or by direct application to the journal. The bearings for direct grease lubrication customarily have a pocket, or recess, into which the grease is pressed by means of a paddle. To lubricate, grease must be melted, so wherever grease is employed there must be sufficient journal friction to generate the heat required to form the essential lubricating film.

In presenting these few very general comments upon the selection and application of lubricants, special recommendations have been carefully avoided, the aim of this preliminary discussion being simply to impress upon the reader that correct lubrication is an extremely important consideration to every pulp and paper mill, large or small, and well deserving of careful managerial attention. It is a matter which cannot be entrusted to subordinates burdened with other obligations, but is a job of first magnitude and well worthy of specialization. The lubrication audit which has been featured affords altogether too great opportunities of effecting substantial economies in the cost of production to be ignored by any mill.

In a subsequent discussion, general recommendations for the correct lubrication of the various types of machinery and equipment entailed in the fabrication of paper will be advanced and examples presented of economies effected in special applications of correct lubrication. In the meantime, it should well repay the average mill to familiarize itself with even the very general comments which have been advanced here, if for no other reason than to gain some appreciation of the advisability of immediately ascertaining its present lubrication costs and acquainting itself with all pertinent facts in regard to its own lubricating practices.

### Paper Mill Employment Increases

There was an increase in both employment and payrolls in the paper and pulp mills and the paper box industry in November as compared with October according to the Bureau of Labor Statistics, Department of Labor.

Reports were received by the Bureau from 218 paper and pulp mills which gave their October employment at 59,226, increasing in November to 59,758, an increase of 0.9 per cent. The payrolls in these mills also increased from $1,609,291 in October to $1,611,965 in November, an increase of 0.2 per cent.

The Bureau also received reports from 186 paper box factories which gave their October employment at 20,763, increasing in November to 21,179, an increase of 2 per cent. The payrolls in these factories also increased from $482,818 in October to $498,336 in November an increase of 3.2 per cent.

### May Make Paper from Bagasse in Hawaii

HONOLULU, January 2, 1929.—Manufacture of paper pulp on a large scale from the bagasse refuse of the various sugar plantations of the territory may become the newest industry of the Hawaiian Islands. A committee of the Hawaiian Sugar Planters' Association believes such a project would be successful and has asked for the appointment of a board to investigate the matter. It was pointed out that the paper mulch factory now in existence at Olaa, Hawaii, would be suitable for paper pulp experimental work after a few alterations had been made.

## New York Trade Jottings

Eugene Kayatz and J. J. Gorjatcheff, representatives of the Central Paper Trust of Russia, sailed from New York for Russia last week.

* * *

Jose de la Macorra, technical director of the San Raphael Paper Company, of Mexico, was a visitor to the Technical Association offices last week.

* * *

Pierre Drewson, formerly chemist of the Barrett Company in New York City, is now with the Hinde & Dauch Paper Company, at Sandusky, Ohio.

* * *

Dr. J. L. A. Macdonald, chief chemist of Tullis Russell & Co., Ltd., of Markinch, Scotland, was a visitor to the TAPPI offices last week, prior to returning home from New York aboard the White Star liner *Baltic*.

* * *

R. J. Scanlan, formerly chief of the materials inspection and testing department of the T. E. Murray Company, Inc., New York, has now joined the general sales department of the Walworth Company as sales engineer, with headquarters in New York.

* * *

At the last monthly meeting of the New York Association of Dealers in Paper Mill Supplies it was decided to draw up a set of classifications for waste paper packed in the city of New York. This progressive move will no doubt be welcomed by the paper mills.

* * *

G. M. Cameron has joined Ruths Steam Storage, Inc., New York, as sales engineer, with headquarters at the company's main office, 292 Madison avenue, New York. Prior to this connection, Mr. Cameron was associated with the Cameron Coal Company, Philadelphia, Pa.

* * *

The International Combustion Engineering Corporation announce that its subsidiary, the F. J. Lewis Manufacturing Company, wil lhenceforth be known as the International Combustion Tar and Chemical Corporation, with general offices at the International Combustion Building, 200 Madison avenue, New York.

* * *

H. Bentley MacKenzie, of the United States Chamber of Commerce, was the principal speaker at the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, held at the Canadian Club last Monday. His interesting and instructive address on "South American Export Possibilities" was thoroughly enjoyed by those present.

* * *

Charles F. Hubbs & Co., of New York, and its branch at Troy, N. Y., have been appointed distributors of Gator Hide Mulch paper in New York and surrounding territory, including Long Island, by the International Paper Company, New York. The Hubbs & Towe Company, of Buffalo, and the Interstate Cordage and Paper Company, of Pittsburgh, have also been appointed distributors of Mulch paper in their respective territories.

### W. P. Hawley, Sr., Home From Abroad

PORTLAND, Ore., January 11, 1929.—W. P. Hawley, Sr., accompanied by Mrs. Hawley and their granddaughter Adele, has returned from an extended trip abroad in which tours were made both through Europe and the Orient. Mr. Hawley is president of the St. Helens Pulp and Paper Company at St. Helens and of the Hawley Pulp and Paper Company at Oregon City, Oregon.

### J. Kaster Made General Superintendent

PORTLAND, Ore., January 11, 1929.—Joe Kaster, Jr., formerly assistant superintendent of the Oregon Pulp and Paper Company at Salem, has been appointed general superintendent, succeeding P. J. Lamoureaux, resigned.

# "The Model Paper Mill" of the Kalamazoo Vegetable Parchment Co. uses Naylor Pipe

**Efficient management is quick to appreciate economies of Naylor Pipe**

IN the mill of the Kalamazoo Vegetable Parchment Co. thousands of feet of Naylor Pipe are in service.

Light weight was one reason for the choice. Naylor Pipe has a special construction that makes it the strongest light weight paper mill pipe that is made.

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Besides those advantages the smooth spiral interior of Naylor Pipe imparts a freedom from clogging that according to paper mill engineers has reduced operating costs.

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Naylor Pipe coated with lead by the "Leadizing" process gives a resistance to chemical solutions in the paper mill that results in a further protection to your pipe investments.

Toncan Copper Molybdenum Iron is a development of Central Alloy Steel Corporation, the world's largest and most highly specialized alloy steel producer. It possesses a superior corrosion resistance, making it the favored pipe material.

# PAPER TRADE JOURNAL

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Vol. LXXXVIII New York, January 17, 1929 No. 3


## COMING EVENTS

Fifty-second Anniversary of the American Paper and Pulp Association. Convention and Meeting of Affiliated Associations. Waldorf-Astoria Hotel, February 18-21. Annual Meeting, Thursday, February 21. Annual Banquet, Grand Ball Room, Thursday, February 21.

National Paper Trade Association of the United States. Convention, Waldorf-Astoria Hotel, February 18-20.

Technical Association of the Pulp and Paper Industry. Convention, Waldorf-Astoria Hotel, February 18-21. Annual Banquet, Hotel Commodore, Wednesday, February 20.

Salesmen's Association of the Paper Industry. Annual Meeting, Waldorf-Astoria Hotel, Tuesday, February 19. Luncheon, Tuesday February 19.

New York Association of Dealers in Paper Mill Supplies. Annual Banquet, Hotel Commodore, Wednesday, February 20.

Canadian Pulp and Paper Association. Convention, Ritz-Carlton Hotel, Montreal, January 23-25. Annual Banquet, Friday, January 25.

## BIBLIOGRAPHY OF PAPER MAKING

The paper industry, like every other major industry, is confronted with the problem of producing a better product at a lower unit cost. The problem involves many factors which need not be discussed here; from past experience we know that it will be solved through that much abused, much misunderstood and yet much needed "Research department", whose personnel will be found among the members of TAPPI.

The successful solution of any research problem involves two very distinct steps: First, a knowledge of the "state of the art", or the published information to be found in books and periodicals; secondly, an extension of this knowledge by competent workers in well-equipped laboratories. Too many people lose sight of the first step. It is well known that, in the industries, thousands of dollars are frequently spent on experiments to find out facts which have long ago been discovered, published and filed in libraries, which might have been revealed by an intelligent search.

If there were but one periodical, where all the information regarding a given industry might be found, the problem of keeping abreast of the work being done might be fairly easily solved, especially if the annual volumes had a satisfactory index. This, of course, is not true. Information regarding the manufacture of pulp and paper for the year 1927, for example, were scattered through more than sixty journals, many of which do not publish either a table of contents or an index. It is, therefore, very necessary that some kind of a key to the ever increasing mass of technical literature should be furnished the industrial research worker.

The first valuable aid which has been provided is the abstract journal. Because of the fact that chemistry is the best organized science, it follows that the chemical side of paper making is more completely covered than the mechanical side. There is the Abstract Section of the Journal of the Chemical Society (England), established in 1882 and Chemical Abstracts, founded in 1907. For the entire industry, there are the Abstracts prepared by the Committees on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry, which are practically complete, but cover a period of less than ten years. However, the abstracts are scattered through the issues of these publications and it is necessary to consult indexes in order to obtain the papers dealing with any particular subject, and many places in such indexes, if a complete list of all papers is to be assembled.

To meet this need, the German Society of Pulp and Paper Chemists, in 1909, started an annual bibliography of both the chemical and mechanical sides of paper making. In 1920, both the English and American Technical Associations started similar bibliographies. Even, these, however, do not entirely fill the needs of the research workers. It is a time consuming operation to run through a series of annual bibliographies for ten or twenty years, in order to locate a given reference, even when these annual bibliographies are available.

The Committee on Abstracts and Bibliography, through its chairman, Dr. Clarence J. West, and with the cooperation of the Research Information Service of the National Research Council, of which he is the director, has therefore compiled a Bibliography of Pulp and Paper Making, covering, as far as the material was available, the period 1900 to 1928, thus assembling in one place the material found in the several annual bibliographies. The references are classified under 154 main heads, many of which are further subdivided; the main heads (listed as the Table of Contents) and the subdivisions are alphabetically arranged as an index, so that they may be readily located.

The general plan of the bibliography consists in giving first, references to any published bibliographies on the subject in question, since these may contain references previous to 1900, as well as patent citations; then follows a selected list of books; and finally references to the periodical literature. When it is realized that this bibliography contains approximately 18,000 individual citations (which does not take into account the articles which have been published in several places, all or most of which are given in one citation), it is seen that this work supplies the research worker with an index to pulp and paper making literature, which he could not duplicate without the expenditure of thousands of dollars, even if he had access to all the magazines covered by the committee.

It is worthy of note that no other industry has published such a complete systematic index of its literature. An examination of West and Berolzheimer's "Bibliography of Bibliographies in Chemistry and Chemical Technology" shows that, in many industries, very limited fields have been covered, but nowhere can be found a publication which gives under one cover the complete story, as portrayed by the literature, of any other large industry.

The paper industry, and especially the Technical Association, is to be congratulated upon the activity of its Committee on Ab-

stracts and Bibliography; it has made available to the industry, as a whole, a working tool which will save men in the laboratory, the office and the mill, the tiresome drudgery of searching thousands of pages of printed matter, in order to locate a desired article or to discover the present "state of the art" in any phase of paper making.

The Bibliography of Pulp and Paper Making which has been published by the Lockwood Trade Journal Company for the Technical Association of the Pulp and Paper Industry is just off the press. As only a very limited edition has been printed it will be advisable to get in orders as soon as possible. The book is attractively and substantially bound in cloth and contains 982 pages. The price is $10.00 per volume. The Bibliography may be ordered from the Lockwood Trade Journal Company, 10 East 39th Street, New York.

## Alleges Monopoly in Valve Bags

The United States Government through the United States Attorney, Leonard E. Wales, of the District of Delaware, has brought a petition against the Bates Valve Bag Corporation, incorporated under the laws of the State of Delaware, with principal offices located in the city of Chicago, alleging that the Bates Company has created a monopoly in valve bags in violation of the Clayton Act.

It requests the Court to render null and void all contracts, agreements and arrangements between the Bates Company and users of the Bates machines so far as they restrain the user with regard to the purchase and use of valve bags.

The petition also asks the court to declare null and void all contracts, agreements and arrangements between the Bates Company and the licensed bag makers, so far as they require the licensed bag makers to deal only with the Bates Company or nominees of the Bates Company.

The petition further requests the court to enjoin the Bates Company from doing any act in pursuance of or for the purpose of carrying out and executing contracts, agreements and arrangements described in the petition and from entering into any similar contracts, agreements and arrangements in restraint of interstate trade or commerce and competition in valve bags.

## Foote Bros. Open New York Branch Office

Owing to the expansion of the business and interests of Foote Bros. Gear and Machine Company and to better serve their customers in eastern territory, they have recently established a New York branch office which will be in direct charge of E. A. Phillips, who will have his headquarters in the Woolworth Building in New York City.

The New York branch will have control of all territory in the New England States, New York, as far west as Rochester and the northern half of New Jersey.

Mr. Phillips' training and wide experience along engineering lines is expected to be of great assistance in helping customers and prospects of the company in that territory to solve their problems on gearing, reducers and transmission equipment.

## Japanese Paper Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 16, 1929.—The Japanese Paper Manufacturers' Association reports an output of 57,003 short tons of paper by the mills of the association during the month of October, news print paper amounting to 23,354 tons constituting the largest single item. Other leading classes were best grade printing paper 9,300 tons, ordinary printing paper, 6,517 tons; torinoke paper (commonly used for printing paper), 4,436 tons, and wrapping paper, 3,113 tons. Sales during the month totaled 56,190 tons, or 98 per cent of production.

## Executive Board of Brotherhood Meets

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., January 14, 1929.—The annual session of the executive board of the International Brotherhood of Papermakers convened here during the past week and considerable business was transacted. Several members were absent on account of illness including Archie Hook, of Chicago, and Arthur Daoust, of Hull, Quebec, Canada. William R. Smith, president of the Brotherhood, presided and other members of the board present were Arthur Huggins, Frank P. Barry, George J. Schneider, A. F. McLeod and Joseph Addy. The opening session was spent in going over the affairs of the Papermakers Realty Corporation, which owns the block housing the union, the corporation really being the executive board of the papermakers' union.

Edward Alden, of Holyoke, Mass., whose business is to promote the sale of union watermarked paper, was in this city attending the meeting of the executive board. According to Arthur Huggins, secretary of the Brotherhood, an entire session was spent in discussing various phases of the action that has been brought by the United States government against several companies that have been turning out the union watermarked product and likewise against certain officials of the Brotherhood, the action alleging a violation of the Sherman anti-trust law. The executive board decided to hold its biennial convention this year in Montreal beginning on March 5. Although the cities of Toronto and Quebec both put in bids for the wage scale conference and convention Montreal was the unanimous choice after train service and other details had been carefully checked. The gathering will be held at either the Queens or the Mount Royal Hotel, no decision having yet been reached in this respect. The gathering will bring to the Canadian city over one hundred members of not only the papermakers' union but of other unions affiliated with the industry. The action taken by the wage scale conference will be of paramount interest to paper manufacturers. Another matter of importance brought up at the meeting included the debating of the question as to the advisability of affiliating with the Wage Earners Protective Association.

D. J. Burke was re-elected president of Hudson River Local Pulp, Sulphite and Paper Mill Workers for the fifth consecutive term at the annual meeting held last week in Glens Falls. David Dufour was chosen vice president and Henry E. Greenwood secretary and treasurer. Harry Price was elected financial secretary and William Brown and Patrick Barry were named trustees of the organization.

## Paper Making and Paper Selling

Beautifully printed and illustrated, the Annual Number of *Paper Making and Paper Selling*, published by Trade Journals, Ltd., of 42 Holborn Viaduct, London, England, contains a wealth of valuable information for members of the paper industry. This special issue includes an interesting and instructive "Survey of Paper Making", from the days of the Ancient Egyptians to the present time.

Another special feature is an article by C. Edgar Thomas on "The Making of News," in which he gives a vivid impression of the largest news print paper plants in Great Britain. Other interesting aritcles include "The Paper Mill of a Century Ago" and "The Antiquity of Blotting Paper".

## To Be Secretary to President Willson

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., January 15, 1929.—Charles G. Neidel of Springfield has been appointed secretary to Sidney L. Willson, president of the American Writing Paper Company, Inc., to succeed William J. Norton who was recently elected treasurer of the company. Mr. Neidel was formerly secretary to Carl Lincoln when general sales manager but recently has been engaged in the Sales Division of Export and Government business.

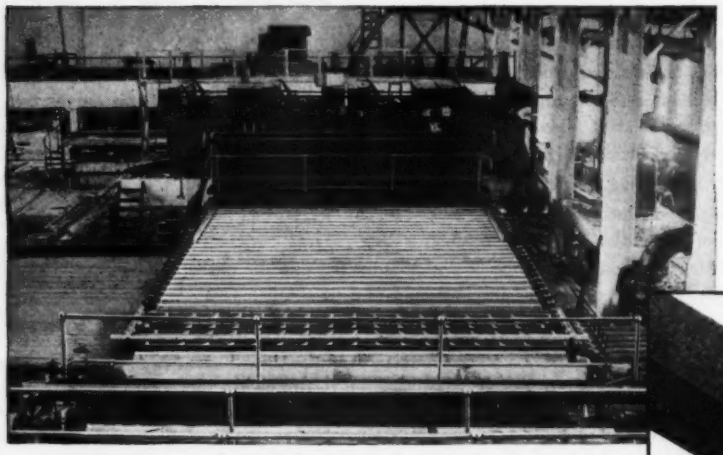


*Photo shows head box on a 262" Bagley and Sewall machine just installed by the Great Lakes Paper Co., Fort William, Ont. Head box lined with Goodrich Aeroboard. As a result of the satisfactory service of this lining, this company has just ordered another Aeroboard lining for a 304" paper machine*

# This head box lining protects quality of paper

## *New Goodrich development, Aeroboard, insures uniformity of product . . . . .*

AEROBOARD, the remarkable new "rubber lumber" developed by Goodrich, makes a smooth, easily cleaned head box lining.

Aeroboard is superior to African mahogany, cypress or other wood lining because Aeroboard does not accumulate slime and dirt. "Slugs" and imperfections in the sheet are substantially reduced. Head boxes lined with Aeroboard can be quickly hosed out while the felts are being washed.

Any good millwright can apply Aeroboard in your own plant by following our easy instructions. The box can be made absolutely waterproof.

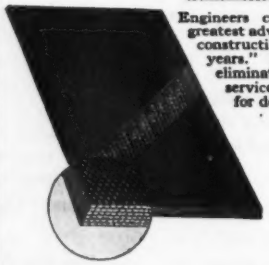
We will gladly send a sample of Aeroboard and further information on its use in the paper industry. We will quote prices on Aeroboard upon receipt of head box drawings showing dimension details. Write to The B. F. Goodrich Rubber Co., Akron, O., or use the coupon below.

**Goodrich Vulcalock couch rolls**

Goodrich process eliminates hard rubber base — rubber cover is joined directly to the metal core. Adhesion 500 lbs. to the square inch. Can be made with aluminum core, cutting down weight by two thirds. Send for details.

**Goodrich Highflex transmission belting**

Engineers call it "the greatest advance in belt construction in 30 years." Bootlegging eliminated. Longer service life. Send for details.



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Vulcalock couch, worm, and press rolls;

Highflex belting;

Rubber lined pipe and fittings;

Fire, water, air and steam hose;

Cutless rubber bearings, rubber lined tanks, screen diaphragms, gaskets, packing.

Flexite buckets and dippers.

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Akron, Ohio

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

# The Estimation of Alpha Cellulose*

By Carl G. S. Schwalbe [1]

The estimation of Alpha Cellulose is carried out in various ways in works laboratories. The values obtained are very variable and even in the same laboratory using the same method, the results frequently deviate from one another. In all countries utilising cellulose for the manufacture of artificial silk, the estimation of alpha cellulose is undertaken in order to get some idea of the sources of error and to find a method which gives more reliable results. In Germany the Fibre Analysis Commission of the Union of German Chemists and the Union of Cellulose and Paper Chemists and Engineers has worked on the methods and published its results two years ago.

Since the result of the experimental work was not entirely satisfactory, the tests were repeated in autumn of the year 1927, the results of which are reported below. Before however, the series of figures obtained were communicated, it apepars expedient to collate the results of the studies which were undertaken during the last few years for the purpose of enquiry into the factors involved in the methods used.

For scientific considerations, it has been considered unadvisable to disclose the names of the members of the Commission in Germany, who have been working in works laboratories.

From the main report, the source of the above mentioned report is from Dr. Schwalbe.

## I. Introductory Ideas on the Methods Used

A method for the estimation of alpha cellulose was first put forward by Jentgen in connection with the manufacture of Viscose. In the manufacture of viscose, cellulose is treated with 17.5 per cent. caustic soda and pressed till it retains a certain amount of soda. For determining the suitability of a cellulose for viscose manufacture, Jentgen chose the treatment of the material with a caustic soda solution of a known strength and acting for a known period, at the end of which the mixture was diluted and washed, the residue being considered to be alpha cellulose. Jentgen has given the following details of the method:—10 grams of coarsely cut fibre are soaked in 50 cc. of 17-18 per cent. sodium hydroxide solution and allowed to stand for 30 minutes, after which time the mercerised fibres are diluted with 50cc. water and filtered on a Büchner funnel through a fine cotton filter with a suction pump and washed free from the alkaline solution of beta and gamma cellulose. The alpha cellulose which is insoluble in caustic soda is treated with hot dilute acetic acid solution, then washed with hot water six to eight times, dried and weighed. It is not possible in general to obtain a chemically pure alpha cellulose by this method since it contains wood gums or pentosans, etc., thus making the real value for the pure chemically resisting cellulose smaller than the value for alpha cellulose. To apply a correction for the content of pentosans is for practical purposes in the factory much too unreliable. This method of estimating alpha cellulose is however sufficiently accurate for the purposes of the factory which subsequently works with not pure cellulose, but cellulose containing various wood gums. The so-called alpha cellulose always contains in addition noticeable quantities of resins, fats and traces of lignins so that it is not possible to talk about a single substance. The method will always remain empirical in nature. So important is it, however, to determine the influence of single factors such as time, concentration and temperature, in order to improve and refine if possible the method and ultimately to put forward a standard method of testing.

Below the separate phases in the estimation of alpha cellulose are critically discussed.

## II. Procedure

The raw material for alpha cellulose determinations consists of cellulose generally in sheet form. In the determination of the copper number of such sheets it will have been noticed that single sheets are not uniform and in different parts of the sheet give different values of the copper number. Such differences must therefore become apparent in determining the content of alpha cellulose and it is therefore advisable to agree upon a standard method of test. The writer of this report proposed to cut along the diagonals of the sheets narrow strips about 1 cm. wide with the aid of a Schopper cutter as used on the tensile testing machine, such strips being subsequently reduced to small pieces about 0.7 cm. edge length.

These small pieces are then thoroughly mixed with the hands as far as possible free from grease and the necessary amount for test weighed out. This division into pieces about 1 cm. long was recommended in a recent paper by Berggnist [2] who remarks that the moisture content of a sheet of cellulose can vary so that it is necessary to divide and mix up the pieces for at least three hours in a closed vessel in order to equalise the content of moisture.

## III. Sub-division of the Pieces

According to the findings of the Eberswalder laboratory this subdivision seems to be sufficient for not too compact

* Report of the tests carried out by the Fibre Analysis Commission in October, 1927. Translated from Der Papier Fabrikant, No. 13, 1928.
[1] Member TAPPI; Professor, Forstl. Hochschule, Eberswalde, bei Berlin, Germany.

masses of cellulose and is preferable to a method involving slicing which has been established by the work of Schwalbe to give lower results for the content of alpha cellulose.

Thus:—

Sliced Samples

82.72 per cent alpha cellulose
82.90 per cent alpha cellulose
82.80 per cent alpha cellulose

Mean 82.81 per cent alpha cellulose

Thus:—

Samples cut into Pieces

86.09 per cent alpha cellulose
86.09 per cent alpha cellulose
86.00 per cent alpha cellulose

Mean 86.04 per cent alpha cellulose

The experimental work of Waentig has also shown that lower values for the alpha cellulose content are obtained by using a grinding mill, for example 82.2 per cent. instead of 84 per cent. Using the Excelsior Mill, it is found that the soda solution not only penetrates the fibre with more difficulty but appreciable amounts of iron are absorbed necessitating a correction in the content of ash.

The ideal method of subdivision is by picking the sample to pieces but is unfortunately impracticable.

## IV. Drying

Waentig has investigated the method of drying of the cellulose and found that there is no difference in alpha cellulose content dried at 105-110 deg. C. and that air dried. In direct contradiction, however, Warlberg found appreciable differences, on the average 3 per cent., between the values obtained with air dried cellulose and cellulose dried at 110 deg. C. Since the results of these authors are quite contradictory, it must be concluded that there exists a form of cellulose which is unchanged by drying at 110 deg. C. and another which is altered in same way by this treatment.

The purification of the cellulose would appear therefore to play an important part.

Since cellulose fibres have a colloidal structure it is probable as a matter of course, that in drying the absorption capacity of the fibres for water is modified. Many instances occur in the paper and cellulose industry which confirm this. Schwalbe determines the moisture content separately and only uses the dry cellulose for the determination of alpha-cellulose. The difference in moisture content according to Porrvik, which occurs if the material is dried in the dessicator or in the air or has remained over water, has no influence on the alpha cellulose value.

## V. The Treatment with Caustic Soda

(a) **Apparatus.**—Jentgen has proposed using the ordinary pestle and mortar. Budeck uses a thick-walled glass vessel and for grinding the cellulose a thick glass rod. It depends entirely on the apparatus as to the particular apparatus used. With a pestle and mortar it is difficult and almost impossible to control the temperature and the carbon dioxide in the air may have a marked influence, which has been shown however by Ernden in the Eberswalde Laboratory to be negligible. The material composing the rod, namely glass, is not appreciably attacked by the soda solution so that any error due to dissolved glass need not be feared.

(b) **Concentration of Caustic Soda.**— The strength of caustic soda used is that usually employed for the mercerisation of cotton fibres, namely 17.5 per cent.

(c) **Proportion of Caustic Soda.**—Jentgen uses cellulose and soda in the proportion of 1:5. This amount of soda is comparatively small. Increasing the proportion of soda decreases the alpha cellulose value so that a varying quantity of soda is not permissible, and it is necessary to come to some agreement as to the exact quantity to be used. According to Waentig the value for alpha cellulose decreases by 10 per cent. if the proportion of soda is quadrupled, making 1 part of cellulose to 20 parts of soda. Ross states that increasing the proportion of soda markedly decreases the alpha cellulose value according to the following table:—

| Grams of soda (17.5%) to 1 gram of cellulose | C.c. of soda at 20° to 1 gram of cellulose | Per cent loss | Per cent alpha cellulose |
|---|---|---|---|
| 2.95 | 2.46 | 7.81 | 92.19 |
| 4.52 | 3.77 | 11.06 | 88.94 |
| 4.95 | 4.13 | 12.63 | 87.37 |
| 5.62 | 4.70 | 12.64 | 87 66 |
| 5.72 | 4.75 | 12.80 | 87.20 |
| 6.48 | 5.40 | 12.57 | 87.43 |
| 6.51 | 5.43 | 13.17 | 86.83 |
| 6.65 | 5.54 | 13.29 | 86.71 |
| 8.30 | 6.91 | 13.47 | 86.53 |
| 10.00 | 8.34 | 13.48 | 86.52 |

Since we are concerned with a conventional method it is unimportant as to how much soda is used if the same amount be used every time for the determination. The more soda used, the easier the cellulose is impregnated with it.

A member of the commission remarked in autumn, 1927, that the temperature of a mixture of cellulose and caustic soda increases during mercerisation. If this be carried out in a constant temperature bath at 18 deg. C., it is noticed that at the end of 30 minutes the temperature has risen to 19 deg. With a larger proportion of soda the temperature increase is not so much.

The following table shows the proportions used by various investigators:—

| Method | Cellulose | Caustic soda | Caustic soda calculated to 10 grams of cellulose |
|---|---|---|---|
| Jentgen ..... | 10 grams | 50 cc. | 50 cc. |
| Waentig ..... | 3.5 grams | 50 cc. | 143 cc. |
| Mill "A" ..... | 3.0 grams | 50 cc. | 167 cc. |
| Commission ..... | 3.5 grams | 75 cc. | 214 cc. |

## VI. The Compactness of Cellulose Sheets and Its Influence on the Swelling in Caustic Soda

The value for the content of alpha cellulose can be influenced by the degree of compactness of the cellulose. Heavily compressed cellulose is less easily penetrated by soda than lightly compressed material. Cellulose for artificial silk manufacture should be as far as possible compressed to the same extent so that differences do not appear in the finished article.

As the soda penetrates the material, a disintegration of the sheets is noticed accompanied in some instances by a very strong swelling and in others a more moderate swelling of the cellulose. The difference in thickness before and after soaking in soda can be sometimes somewhat considerable. As Schwalbe has shown, the estimation of weight of strips before and after treatment with soda gives an indication of the extent of swelling, which differs widely amongst various celluloses. Whether the variation in swelling influences the alpha cellulose value is not yet settled. Theoretically it must be admitted that with a slight or only a very slow swelling cellulose, the soda is in contact for a shorter time with the separate cell membranes than with a cellulose which swells at once.

## VII. Grinding

From the theoretical standpoint, the grinding of the cellulose should increase the action of the soda because of a swifter and more intimate soaking of the cellulose. Schwalbe has made experiments on mechanical grinding in a mill under uniform pressure but the Commission came to the conclusion that such mechanical apparatus unnecessarily complicates matters and that the effect of grinding is not so important as had been assumed.

Porrvik has investigated the effect of grinding and found it to be negligible. For example a cellulose with barely two minutes agitation with soda gave values for alpha cellulose content of 89.98 per cent. and 89.94 per cent. with five minutes grinding and 90.05 per cent. with fifteen minutes grinding.

In another case the difference between five and ten minutes grinding was somewhat greater, namely 84.4 per cent. after five minutes grinding and 87.8 per cent. after ten minutes. Such differences, however, are within the experimental error of the various methods of determining alpha cellulose. By grinding cellulose becomes slimy, rendering washing more difficult.

[2] Ragnar Bergquist, Svensk Pappers-Tidning, 31, 76-78.

### VIII. Time Factor

The time for the mercerisation of the cellulose was fixed at thirty minutes by Jentgen. Waentig showed that slight

| Cellulose | 30 mins. mercerization per cent alpha cellulose | 1½ hours mercerization per cent alpha cellulose |
|---|---|---|
| 1 | 87.37 | 87.09 |
| 2 | 86.31 | 86.22 |
| 3 | 87.24 | 86.91 |
| 4 | 85.48 | 85.32 |
| 5 | 86.65 | 86.57 |
| 6 | 84.84 | 84.50 |
| 7 | 84.45 | 84.44 |
| 8 | 86.52 | 86.42 |
| 9 | 86.97 | 86.93 |
| 10 | 86.24 | 85.88 |
| 11 | 86.11 | 85.82 |
| 12 | 86.71 | 86.62 |

variations in the time did not affect the result, and therefore increased the time to forty-five minutes. Bubeck found no great difference in prolonging the period from thirty minutes to one and a half hours.

Ross came to the same conclusion as set out in the following table:—

| Time of mercerization in hours | Per cent alpha cellulose |
|---|---|
| 0.5 | 86.49 |
| 1.5 | 86.06 |
| 2.0 | 85.97 |
| 5.0 | 85.70 |
| 16.0 | 85.23 |
| 18.0 | 85.54 |
| 40.0 | 84.30 |

Ross has proposed a time of three hours for mercerisation, thus ensuring a thorough penetration of the fibres by the strong caustic soda.

### IX. Temperature Factor

With regard to the influence of temperature opinions on this point are at variance. Waentig's investigation show that appreciable differences do occur at different temperatures as indicated in the following table:—

| Temperature | Per cent alpha cellulose |
|---|---|
| 6 deg. C. | 80.8 |
| 18 deg. C. | 84.0 |
| 30 deg. C. | 84.5 |

Especially emphatic is Bubeck who considers the influence of temperature so important that he works at a constant temperature using a thermostat. The evidence he puts forward however is not very convincing as only results for three celluloses are given of which only one is an "artificial silk" cellulose, this being the only variety taken into account in determinations of alpha cellulose since bleached cellulose for paper and unbleached cellulose are not under consideration. With the single "artificial silk" cellulose, the variation found at the observed temperatures of 18 deg., 21 and 24 deg. C., is only I per cent., an amount which can occur as an error at any one temperature. At a lower temperature, such as 12 deg. C., the deviation becomes more appreciable in agreement with Waentig's results.

"ARTIFICIAL SILK" CELLULOSE

| Temperature of mercerization | Per cent alpha cellulose |
|---|---|
| 12 deg. C. | 85.4 |
| 15 deg. C. | 86.15 |
| 18 deg. C. | 86.73 |
| 21 deg. C. | 87.40 |
| 24 deg. C. | 87.74 |
| 27 deg. C. | 88.11 |

The variation occuring in the especially interesting interval between 20 deg. and 25 deg. C., has been investigated by Ross with the following results:—

| Temperature deg. C. | Per cent alpha cellulose |
|---|---|
| 10 | 87.89 |
| 15 | 86.88 |
| 20 | 86.68 |
| 25 | 86.86 |
| 30 | 87.34 |
| 35 | 87.08 |
| 50 | 87.12 |
| 60 | 87.20 |
| 75 | 86.04 |
| 100 | 78.79 |

Porrvik's results for the interval between 20 deg., and 40 deg. C., are as follows:—

| Temperature | Per cent alpha cellulose | Per cent beta cellulose | Per cent gamma cellulose |
|---|---|---|---|
| 20 deg. | 90.35 | 1.99 | 7.75 |
| 40 deg. | 89.90 | 0.98 | 9.12 |
| 60 deg. | 88.35 | 1.40 | 10.25 |

Bergquist has recently compared the values which he has obtained at 4 deg., and 20 deg. C., and concluded that the variation which amounts to about 1.5 should be so divided out that under 20 deg. C., a correction of 1.0 per cent. alpha cellulose be added while above 20 deg. C the same amount be deducted. Since determinations are never ordinarily made at 5 deg. C., the advantage to be gained from such a correction is not entirely free from objection in as much as it must first be settled whether above 20 deg., C., the correction of 0.1 per cent. does not depend on the material under test. It will be a matter for congratulation if such a correction factor is borne out experimentally as substantially correct because then, though working at various temperatures, allowance can be made.

In these circumstances, the elevation in temperature which occurs during the action of caustic soda on cellulose is inappreciable. It is quite unimportant at what temperature the determination be made, either at 18 deg., 21 deg., or 22 deg., C., which are comparatively easily obtainable in laboratories without the use of a thermostat by placing the apparatus in a water bath.

Emden was unable to find any marked variation over a temperature interval of 6 deg.

| Temperature | Per cent alpha cellulose |
|---|---|
| 21 deg. | 88.32 |
| 22 deg. | 88.51 |
| 24 deg. | 88.77 |
| 27 deg. | 88.69 |

Generally the temperature is under 18 deg. C., and the celluloses which are not estimated for artificial silk manufacture, are not sensitive to small variations in temperature. It appears therefor unnecessary to complicate the apparatus by the use of a thermostat.

### X. Dilution with Water After Completion of Mercerisation

According to the original method proposed by Jentgen, the mixture is diluted with an equal volume of water after 30 minutes. The effect of the degree of dilution is somewhat important as shown in the following table by Bubeck.

"ARTIFICIAL SILK" CELLULOSE (ASH = 0.2 PER CENT)

| Degree of Dilution. Per cent caustic soda | Per cent alpha cellulose |
|---|---|
| 4.2 | 88.22 |
| 5.0 | 88.09 |
| 6.0 | 87.70 |
| 7.0 | 87.29 |
| 8.2 | 86.75 |
| 9.0 | 86.87 |
| 10.0 | 86.94 |
| 11.0 | 87.15 |
| 12.0 | 87.49 |
| 15.0 | 87.70 |
| 17.5 | 87.86 |

Results by Ross show that the effect of a still greater dilution is still within the limit of experimental error.

| Mixture with cc. of water | Per cent alpha cellulose |
|---|---|
| 0 | 88.45 |
| 0 | 88.20 |
| 400 | 86.10 |
| 400 | 86.45 |
| 1,000 | 87.30 |
| 1 000 | 87.20 |

### XI. Filtration

A Büchner filter funnel is generally used for the purpose of filtration. At first filtration through cotton was recommended but this is quite superfluous since fibres tend to fill up the holes of the funnel which act as a filter to further quantities poured on them. Other arrangements are naturally applicable and Wahlberg recommends a Jena-glass crucible which loses 0.002 gram in weight after each determination and must be cleaned with chromic acid. Porcelain crucibles are used in the Eberswalder Laboratory with porous bottoms, with which no loss in weight is to be feared by the action of the soda. These crucibles are naturally more expensive than Büchner funnels and the time for filtration is prolonged by the very small pores of the filter.

The Buchner funnel can therefore be used without hesitation.

### XII. Washing with Water

In Jentgen's original method, the cellulose is well washed with water after the action of soda. Ross states that the

temperature of the wash water is of importance, hot water giving higher values for alpha cellulose than cold water:—

| Temperature of wash water | Per cent alpha cellulose |
|---|---|
| 7 deg. C. | 85.18 |
| 20 deg. C. | 86.33 |
| 35 deg. C. | 87.15 |
| 60 deg. C. | 87.63 |
| 80 deg. C. | 87.58 |

Instead of water, soda solution has been recommended on many sides. Waentig uses 200 cc. of 8 per cent. caustic soda and Parsons 100 cc. of 5-8 per cent. soda.

Bübeck remarks regarding this that a 9-12 per cent. solution of caustic soda strongly attacks cellulose and must be subsequently thoroughly washed out. He defines as alpha cellulose that part of a cellulose which after 30 minutes mercerisation in 17.5 per cent, pure caustic soda at a temperature of 18 deg. C., is insoluble in 8-9 per cent. (by volume) soda at room temperature (18 deg.-22 deg. C.).

It cannot be doubted that the above mentioned concentration of soda strongly attacks cellulose but it must however be remembered that by dilution of the soda with an equal volume of water a final concentration of 9 per cent. is obtained. Bübeck even puts forward the suggestion to dilute and wash with 9 per cent. soda in which case the action on the cellulose is still more energetic than if only dilution took place with water.

Theoretically such a procedure should provide a means of determining the maximum solubility of cellulose in 9 per cent. caustic soda but such a washing is only to the interest of the artificial silk manufacturer and is in opposition to the interests of the cellulose manufacturer.

After washing with soda, this is naturally followed by a water wash, reference being made to the following table for the quantity used.

### XIII. Acid Wash

Since alkali is not completely washed out of cellulose by water an acid wash with for example acetic acid, is necessary. The concentration and quantity is in many instances unobtainable.

The acid should be allowed to act for some time, say five minutes, followed by repeated washings with water.

Washing of alpha cellulose with caustic soda, water, acetic acid and alcohol:—

| | Soda | Water | Acetic Acid | Water | Absolute Alcohol |
|---|---|---|---|---|---|
| Jentgen ..... | —— | 500-600 cc. | hot, mixture not given | 300-400 cc. hot | —— |
| Waentig ..... | 200 cc. of 8% | —— | 2 × 50 cc. of 5% | wash till neutral | —— |
| Commission ..... | 200 cc. of 8% | 1,000 cc. | 50 cc. of 5% | 1,000 cc. | —— |
| Mill 1..... | 400 cc. of 8% | 2,000 cc. | 100 cc. of 10% | 2,000 cc. | mixture not given |
| Mill 2..... | —— | —— | mixture not given | mixture not given | mixture not given |
| Mill 3..... | 100 cc. of 5% | 200 cc. cold | 5% mixture not given | 1,000 cc. luke warm | —— |
| | | 1,000 30°-40° warm | | | |

### XIV. Drying

Reference should be made at this stage on the most suitable temperatures and periods to the fundamental and detailed work of Obermiller and some agreement arrived at as to the drying time and temperature. Generally speaking 105 deg. C., and 4-5 hours are sufficient.

A few investigators have noticed an increase in weight with a longer drying, which may, in exceptional cases be due to a spoiling of the cellulose and in other cases an imperfect method of drying. In the drying chamber the weighing glass must not stand directly on the metal but should be separated by a thick layer of pulp or wood chips from the metallic base, otherwise a rise in temperature is certain owing to the good conductivity of the metal for heat.

### XV. Weighing

It is only necessary to mention here a few precautionary measures to take in weighing. The weighing glasses after long use no longer close tightly so that during weighing an appreciable increase in weight may occur owing to the extraordinary high hygroscopicity of cellulose fibres.

### XVI. Ash Testing

If the value for alpha cellulose is desired on anhydrous and ash-free material, it is necessary to burn off the cellulose and to allow for the mineral matter.

### XVII. Calculation

The analysis can be calculated on anhydrous material, on anhydrous and ash-free material or on cellulose. Generally it is reckoned on the anhydrous material. Some members of the Commission have reckoned on water and ash-free material. With a higher ash content more or less noticeable variations are given. The objection is raised against the calculation being made on ash-free material that one must logically deduct not only the mineral matter but also resin and fat which are present in every cellulose. In further pursuit of this line of thought follows a correction for pentosans (wood gums) which exist in both the original cellulose tested and in the alpha cellulose prepared from it. Such a correction would, as has already been mentioned, complicate the method. To carry out a complete estimation of resin and fat necessitates first of all at least an understanding of the action of the solution medium, the period of extraction, etc. Under these conditions it appears advantageous to restrict oneself to anhydrous or anhydrous and ash-free material. These questions are only now on the way to being solved.

### XVIII. Experimental Comparative Tests of the Jentgen and Bübeck Methods of Analysis

As indicated in the introduction, a comparison of the Jentgen and Bübeck methods of analysis was undertaken in the autumn of 1927.

Bübeck stipulates as the more important factors the working temperature and a copious washing with 9 per cent. caustic soda solution for obtaining good reliable results. For testing this out experimentally seven different factories and high-school laboratories collaborated, using a cellulose already investigated in 1925 and working according to the methods of Jentgen and Bübeck, details of which are as follows:—

*1. Jentgen's Method.*

The moisture content of the cellulose under investigation is determined in a separate test, three grams of the air dry cellulose are weighed out into a mortar and thoroughly ground up with 15 cc. of 17.5 per cent. caustic soda solution with a pestle and the aid of a porcelain spatula. The mixture is allowed to stand for 30 minutes reckoned from the beginning of the grinding operation, which is applied repeatedly throughout this period, then 15 cc. of distilled water are added, stirred into the mixture with the spatula until a uniform paste is obtained (about half minute). The mass is then placed on a porcelain funnel, without a filter, of 5-7 cm. diameter, sucked out and pressed together with a glass ramrod. The filtrate is poured twice through the funnel to retain any fibres which have previously passed through, and the fibres washed with 750 cc. of water as follows:—The vacuum is raised, 75cc. of water poured on to the funnel and wait until the water passes through uniformly. After about 30 seconds the wash water is sucked through, the procedure being repeated until the entire 750 cc. of water has been used. The fibres are finally washed twice with 50 cc. of hot 10 per cent acetic acid and again with 750 cc. of hot water as above.

The alpha cellulose is dried for 2 hours at 105 deg. C., in a drying oven, and then transferred to a weighed porcelain or quartz crucible containing in a weighed close-fitting weighing glass dried for a further two and a half hours at 105 deg. C, weighed and ashed.

*2. Bübeck's Method*

Exactly three grams of air dry cellulose, of known moisture content, is ground up with 20 cc. of 17.5 per cent. caustic soda solution at 18 deg. C., to a uniform mixture and allowed to stand for 30 minutes. 80 cc. of 5-6 per cent. by volume of caustic soda solution at 18 deg. C. is then added and stirred in the mixture which is filtered free from fibre through a Gooch Crucible (filter through a porcelain disc without a filter). The alpha cellulose is next washed with 50 cc. of 8-9 per cent. soda and finally washed with 50 cc. of 8-9 per cent. soda and finally washed free from alkali with 750 cc. of water in portions of 75 cc. 100 cc. of hot dilute 10 per cent. acetic acid are next poured over the fibres which are again washed free from acid with 750 cc. hot water, and dried at 105 deg. C. for about four and a half hours to constant weight.

Three analyses were made and taking the mean value it can be seen from the following tables and curves that a marked discrepancy occurs between the two methods.

Comparison between the mean values obtained in the investigations of 1925 and 1927:—

JENTGEN

| Laboratory | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1927 ..... | 86.14 | 86.73 | 85.86 | 86.06 | 86.74 | 87.78 | 86.47 |
| 1925 ..... | 88.11 | 87.46 | 87.16 | 86.96 | 86.41 | 88.17 | .... |
| Difference ... | —1.97 | —0.73 | —1.30 | —0.90 | +0.33 | —0.39 | .... |

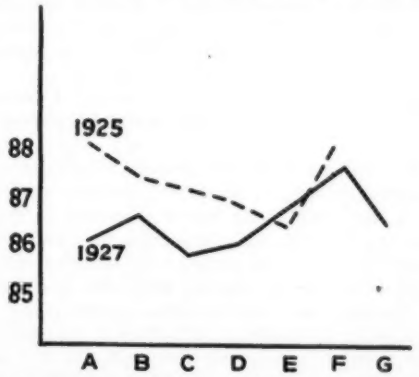
BUBECK

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1927 ..... | 85.47 | 85.83 | 85.31 | 84.98 | 86.04 | 86.53 | 85.73 |
| 1925 ..... | 87.34 | 86.77 | 86.17 | 86.28 | 87.07 | 88.15 | 84.75 |
| Difference ... | —1.87 | —0.94 | —0.86 | —1.30 | —1.03 | —1.62 | +0.98 |

Collected average values from investigations of 1925 and 1927:—

| | | | |
|---|---|---|---|
| 1927 ..... | 86.54 | 1927 ..... | 85.69 |
| 1925 ..... | 87.37 | 1925 ..... | 86.63 |
| Difference ..... | 0.83 | Difference ..... | 0.94 |

Wide variations occur in the results of each method but are greater in the case of the Jentgen method than Bübeck's method. It is especially interesting to note that the same cellulose in the same laboratories investigated in 1925 and again after a lapse of two years in 1927 gave considerable variation in the results from which it can be concluded on




MEAN VALUES OF INVESTIGATIONS OF 1925 AND 1927. (JENTGEN).

the one hand that the influence of the personal factor is very great or on the other hand that the variations result from a gradual drying out of the cellulose.

It is striking that the results of 1927 are without exception lower than those of 1925.

MEAN VALUES (JENTGEN AND BUBECK)

| Laboratories | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| Jentgen .... | 86.14 | 86.73 | 85.86 | 86.06 | 86.74 | 87.78 | 86.47 |
| Bübeck ..... | 85.47 | 85.83 | 85.31 | 84.98 | 86.04 | 86.53 | 85.73 |
| Difference ... | 0.67 | 0.90 | 0.55 | 1.08 | 0.70 | 1.25 | 0.74 |

Highest mean value (Jentgen) ..... 87.78 (F)

Lowest mean value (Jentgen) ..... 85.86 (C)

Difference 1.92

Highest mean value (Bübeck) ..... 86.53 (F)
Lowest mean value (Bübeck) ..... 84.98 (D)

Difference 1.55

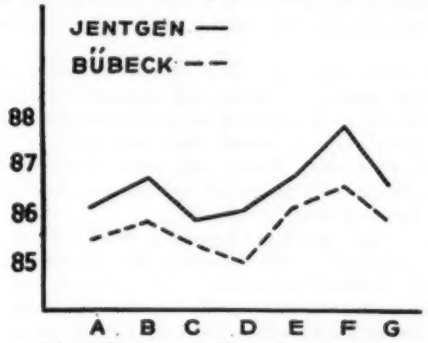
Average of the collected mean values—
Jentgen ..... 86.54
Bübeck ..... 85.69

Difference 0.85

DEVIATION FROM THE AVERAGE OF THE MEAN VALUES

| Laboratory | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| Jentgen .... | —0.40 | +0.19 | —0.68 | —0.48 | +0.20 | +1.24 | —0.07 |
| Bübeck ..... | —0.22 | +0.14 | —0.38 | —0.71 | +0.35 | +0.84 | +0.04 |

If the results of Bübeck are somewhat better than those of Jentgen, the method is more complicated by the necessary use of a thermostat, owing to a great sensitivity of the

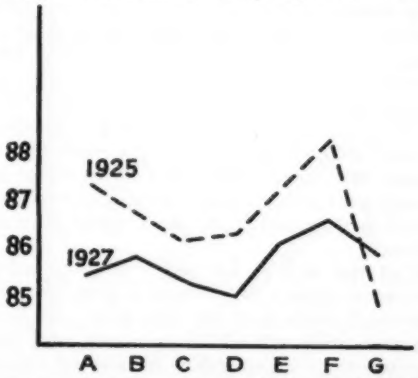



MEAN VALUES OF EACH LABORATORY.

method to variations in temperature so that considering the estimations of Ross which do not show marked variations in the temperature range of 15 deg. to 25 deg. C., it appears unnecessary to complicate the work by using a thermostat. An intermediate proposition is that of Bergquist who proposes an addition of 0.1 per cent. for temperatures under 20 deg. and a subtraction of 0.1 per cent. for temperatures over 20 deg.

The washing with 9 per cent. caustic soda solution in Bübeck's method results in values about 1 per cent. lower than those obtained by Jentgen's method.

The principle of the method being imitated in viscose manufacture, a 9 per cent. soda wash is not questioned in this case and would appear unnecessary especially as in the United States, Canada and Scandinavia the Jentgen method has been




MEAN VALUES OF INVESTIGATIONS OF 1925 AND 1927 (BÜBECK).

adopted with slight variations. It is therefore recommended that the Jentgen method be set out with exact details as to the working method and brought into line with the already existing procedure carried out in Anglo-Saxon and northern countries of Europe for final discussion to take place at the next International Congress of Applied Chemistry. The risk that, by the adoption of a conventional method analytical improvements are not allowed for, need not occur since a standing international commission can test any proposed improvements and introduce them at intervals of five years.

# Utilization of Hardwoods for Pulp and Paper*

By C. E. Curran[1]

The title of this paper probably has a familiar sound. The utilization of hardwoods for pulp, or the possibility of their utilization, has become one of those topics of which, as Mark Twain said of the weather, "We talk a great deal but do little."

The object of this paper is to present certain experimental developments in the pulping of hardwoods which have recently been featured in the research of the Forest Products Laboratory. In the opinion of the writer the subject is timely, and the available data of exceeding interest and worthy of serious consideration.

One has heard for many years of our dwindling pulp-wood supply, of the passing of spruce, and the need for new sources of pulp. But we have continued to see spruce pulp produced in increasing quantities and perhaps have been more or less lulled into a sense of security, feeling that much of this is talk, and talk only, and that the pulp-wood supplies are really underestimated and no great cause for concern.

However, certain things are happening which indicate the contrary. For example, we are witnessing the migration of one of our greatest industries to Canada. Five years ago we led the world in newsprint production. Today, the United States is a poor second with our Canadian neighbors rapidly gaining ground Many of these new developments in Canada are the result of the transplanting of American interests. These newsprint producers have not moved their plants for the privilege of paying greater freight bills, investing greater capital sums in remote places, or because of the admittedly excellent power sites in Canada. It is solely because of spruce pulp-wood, which we no longer possess.

We are also witnessing a phenomenal pulp and paper development in the Pacific Northwest. It has come almost overnight. It is not due to a sudden demand for paper in that territory, but to the great pulp-wood resources which, through low cost of raw material, enable competition with eastern mills with their higher priced wood. It may be predicted that Alaska will likewise witness a similar development in not many years hence; in fact survey parties are even now securing the basic data for pulp mill investment.

Furthermore, we find that many other softwoods are taking a place in pulp production with spruce. In the West and in Wisconsin, hemlock dominates in sulphite manufacture. Jack pine and tamarack have come to be considered entirely suitable for kraft and even occasionally for sulphite pulp. Balsam holds an equal rank with spruce in ground-wood and sulphite manufacture And many can recall the time when these species had to be sneaked into the wood yard as spruce, and practically any operating ill could be laid to their use by the paper maker without fear of contradiction.

With all of this seeking for new sources of softwood for pulping, we seem inclined to overlook a great resource of potential pulp-wood which is at our very door. Hardwoods now occupy the place which was held by softwoods other than spruce a decade or more ago. We admit their value for soda pulp and in paper products where a soft, bulky, opaque sheet is required. Some 800,000 or 900,000 cords are used annually for this purpose. But for nearly any other product we are prone to dismiss hardwoods as unsuitable. In the opinion of the writer a great deal of this is prejudice.

There are many factors in favor of using hardwoods for pulp. Hardwoods are in general more dense and therefore heavier than the softwoods customarily used for pulp. As pulp-wood is purchased on volume basis and paper is sold on a weight basis, there is an opportunity to materially increase the mill output without any greater volume consumption of wood.

This advantage may be shown by weights per cord[2] of typical hardwoods and softwoods given in Table 1.

TABLE 1
WEIGHTS PER CORD OF TYPICAL HARDWOODS AND SOFTWOODS

| Softwoods | Oven-dry (green volume) Lbs.* | Hardwoods | Oven-dry (green volume) Lbs.* |
|---|---|---|---|
| Spruce | 2040 | Aspen | 1955 |
| Hemlock | 2040 | Birch | 2890 |
| Balsam fir | 1785 | Maple | 2975 |
| Jack pine | 2040 | Gum | 2550 |

* Assuming 85 cubic feet solid wood per cord rough and green in pulp-wood sizes.

The price too is less than for softwoods.

### Wood Cost

In a recent report by the Woodlands Section of the American Paper and Pulp Association, domestic spruce is quoted at $16.05 f.o.b. mill, domestic balsam at $12.73 on the same basis, hemlock $12.83. Domestic poplar (peeled) is quoted as $14.33 higher than fir or hemlock, but gum and the other hardwood mentioned are listed at $9.90 per cord and our own inquiries on this point have shown a steady market price of $10.00 per cord peeled and f.o.b. mill.

Considering the question of supply, according to statistics available in the Forest Service, there are hardwoods available as saw timber in the United States to the extent of approximately 460,000 million board feet. This is exceeded by the softwood resources, but the interesting part is that practically all of the hardwood stands are in the North Atlantic States, the Lake States, the South Atlantic States, and in the Mississippi Valley. The cut-over areas of New York, Michigan, Wisconsin, and New England, are growing second-growth timber consisting largely of hardwoods. This second growth is reaching a merchantable age and with proper forestry management can be made to yield a sustained volume of pulp-wood. The established industry therefore has at its very door a supply of material which, if it could be used, would insure continuous operation for all time to come.

With this background the Forest Products Laboratory has specialized on pulping studies of the hardwoods during the past several years.

One phase of this work has dealt with the sulphite process. Previously a number of scout tests have been made relative to the pulping of a large number of American species by the sulphite process and are reported in a Government bulletin[3]. Somewhat illogically perhaps, this work preceded an intensive study of the factors involved in sulphite pulping, which was later carried out by Miller, Swanson, and Monsson, using spruce as the raw material. This latter investigation yielded much excellent information and the principles uncovered were applied to the pulping of hardwoods with results which it is felt have fully justified the effort. This work which was reported by Monsson[4] at the 1928 meeting of the Technical Association of the Pulp and Paper Industry, and in brief brought out the following points:

1. That aspen, maple, birch, and black gum can be readily pulped by the sulphite process giving high yields of bleachable pulp, presumably suited for many grades of paper and paper board in which softwood sulphite is now incorporated.

2. That the cooking curves suitable for softwoods were equally suitable for hardwoods, but that a somewhat higher free acid

* Presented at Fall Meeting of TAPPI, Wausau, Wis., Sept. 25, 1928.
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[2] For oven-dry weight per cubic foot green for various species see U. S. Dept. Agr. Bull. 1485.
[3] Paper Trade J., 86, No. 17, 59-62 (1928).

was necessary and the period of impregnation required lengthening in order to insure a thorough penetration of the chips.

3. That the cooking curves were so nearly identical with those used for spruce or hemlock that it was possible to pulp mixtures of these softwoods with hardwoods.

4. That the pulps from the hardwoods were of good color unbleached, and could be cooked to bleach easily and develop a fair degree of strength upon beating although not quite the equivalent of softwood sulphites in this respect, as far as our present knowledge of fiber processing goes.

The cooking conditions and strength properties of a few typical pulps produced in this work are shown in Tables 2 and 3. The original article should be consulted for complete data.

Only a small quantity of hardwood is now being pulped by the sulphite process. One mill is producing a printing paper from birch and maple; another uses a small proportion of aspen sulphite in the production of tissue. There seem to be many other uses to which this pulp might be put, however. The fibers possess some of the characteristics of soda hardwood pulps such as opacity, bulk, and some degree of softness. This is probably due to their shortness and to the bulky vessels which are inherent in the hardwoods. Such pulps take an excellent finish, retain clay, form well closed smooth surfaced sheets on the paper machine, and develop considerable strength in beating or milling. When bleached they are a characteristic blue—white in contrast to the slight cream tint of bleached soda or sulphate pulps.

The pulp yields are somewhat higher than can be produced by the alkaline processes and consequently hardwood sulphite might presumably expand the field now served by hardwood soda pulp since it combines certain desirable properties of both soda and sulphite. It also has attractive possibilities of replacing softwood sulphite in a number of products such as bond, writing, catalog, cover and print.

TABLE 2
TYPICAL EXAMPLES OF COOKING CONDITIONS, YIELD, AND BLEACHABILITY OF SULPHITE PULPS PRODUCED FROM HARDWOODS

| Cook No. | Species | Acid Composition * Total $SO_2$, | Free $SO_2$, | Combined $SO_2$, | Yield of O. D. Pulp Basis O. D. Weight of Wood Total pulp, | Screened pulp, | Screenings, | Requirement of 35% bleach powder, |
|---|---|---|---|---|---|---|---|---|
| | | per cent | per cent | per cent | per cent | per cent | per cent | per cent |
| 3149 | Aspen | 6.05 | 4.87 | 1.18 | 49.4 | 48.0 | 1.4 | 11 |
| 3151 | Aspen | 5.97 | 4.75 | 1.22 | 49.5 | 48.5 | 1.0 | 10 |
| 3150 | Aspen | 6.20 | 4.98 | 1.22 | 51.4 | 50.1 | 1.3 | 10 |
| 3153 | Aspen | 6.10 | 4.92 | 1.18 | 49.2 | 48.5 | 0.7 | 8 |
| 3172 | Aspen | 6.00 | 4.80 | 1.20 | 50.7 | 50.1 | 0.6 | 8 |
| 3159 | Maple | 5.93 | 4.74 | 1.21 | 47.0 | 43.7 | 3.3 | 30 |
| 3163 | Maple | 6.18 | 4.86 | 1.32 | 46.2 | 44.0 | 2.2 | 20 |
| 3173 | Maple | 6.10 | 4.90 | 1.20 | 44.2 | 43.0 | 1.2 | 15 |
| 3174 | Maple | 6.05 | 4.83 | 1.22 | 49.1 | 46.7 | 2.4 | 35 |
| 3176 | Maple | 6.00 | 4.80 | 1.20 | 47.6 | 46.2 | 1.4 | 28 |
| 3179 | Maple | 6.00 | 4.69 | 1.31 | 46.1 | 45.0 | 1.1 | 20 |
| 3178 | Maple | 5.90 | 4.71 | 1.19 | 46.4 | 45.1 | 1.3 | 20 |
| 3162 | Birch | 6.20 | 5.03 | 1.17 | 46.7 | 45.5 | 1.2 | 18 |
| 3242 | Birch | 6.00 | 4.82 | 1.18 | 46.2 | 45.1 | 1.1 | 16 |
| 3169 | Birch | 6.10 | 4.85 | 1.25 | 46.4 | 45.5 | 0.9 | 15 |
| 3165 | Birch | 6.25 | 5.09 | 1.16 | 49.3 | 47.8 | 1.5 | 22 |
| 3167 | Birch | 6.00 | 4.82 | 1.18 | 46.7 | 45.5 | 1.2 | 18 |
| 3181 | Birch | 5.90 | 4.63 | 1.27 | 47.3 | 46.4 | 0.9 | 15 |
| 3182 | Birch | 5.90 | 4.70 | 1.20 | 46.2 | 45.3 | 0.9 | 15 |
| 3249 | Black gum | 6.05 | 4.85 | 1.20 | 48.3 | 47.2 | 1.1 | 9 |
| 3255 | Black gum | 5.90 | 4.65 | 1.25 | 48.2 | 47.3 | 0.9 | 10 |
| 3215 | White spruce 50% Aspen 50% | 6.20 | 4.97 | 1.23 | 49.5 | 48.0 | 1.5 | 20 |
| 3219 | White spruce 50% Aspen 50% | 6.00 | 4.80 | 1.20 | 48.2 | 47.3 | 0.9 | 10 |
| 3250 | Hemlock 50% Aspen 50% | 6.00 | 4.70 | 1.30 | 47.8 | 47.0 | 0.8 | 16 |
| 3240 | White spruce 50% Maple 50% | 6.00 | 4.79 | 1.21 | 47.3 | 46.0 | 1.3 | 20 |
| 3241 | White spruce 50% Maple 50% | 6.00 | 4.78 | 1.22 | 47.3 | 45.8 | 1.5 | 17 |
| 3244 | Hemlock 50% Maple 50% | 6.05 | 4.74 | 1.31 | 44.6 | 43.6 | 1.0 | 20 |
| 3238 | White spruce 50% Birch 50% | 6.10 | 4.90 | 1.20 | 47.1 | 46.0 | 1.1 | 16 |
| 3239 | White spruce 50% Birch 50% | 6.10 | 4.85 | 1.25 | 48.1 | 47.0 | 1.1 | 14 |
| 3243 | Hemlock 50% Birch 50% | 6.00 | 4.71 | 1.29 | 44.9 | 44.0 | 0.9 | 19 |

* Eighty pounds oven-dry wood and 47 gallons acid used in each cook.

TABLE 3
TYPICAL EXAMPLES OF STRENGTH PROPERTIES OF UNBLEACHED SULPHITE PULPS PRODUCED FROM HARDWOODS

| Cook No. | Species | Ball Mill Strength Tests: Bursting strength in points per pound per ream of 24x36—500, when beaten in the ball mill for 20 min. | 40 min. | 60 min. | 80 min. | Tearing strength in grams per pound per ream when beaten in the ball mill for 20 min. | 40 min. | 60 min. | 80 min. |
|---|---|---|---|---|---|---|---|---|---|
| 3149 | Aspen | .49 | .51 | .58 | .48 | 1.16 | 1.32 | 1.46 | 1.19 |
| 3151 | Aspen | .35 | .32 | .35 | .33 | 0.99 | 1.10 | 1.15 | 1.05 |
| 3150 | Aspen | .41 | .46 | .43 | .43 | 1.19 | 1.12 | 1.15 | 1.32 |
| 3153 | Aspen | .42 | .44 | .42 | .39 | 1.11 | 1.02 | 0.97 | 0.95 |
| 3172 | Aspen | .35 | .41 | .43 | .42 | 1.33 | 1.37 | 1.44 | 1.46 |
| 3159 | Maple | .52 | .65 | .69 | .59 | 1.58 | 1.73 | 1.78 | 1.53 |
| 3163 | Maple | .48 | .62 | .65 | .67 | 1.17 | 1.50 | 1.71 | 1.78 |
| 3173 | Maple | .32 | .37 | .41 | .39 | 1.25 | 1.37 | 1.62 | 1.67 |
| 3174 | Maple | .59 | .85 | .89 | .86 | 1.61 | 1.84 | 2.02 | 1.82 |
| 3176 | Maple | .55 | .76 | .68 | .71 | 1.64 | 1.84 | 1.94 | 1.87 |
| 3179 | Maple | .53 | .68 | .72 | .71 | 1.76 | 2.02 | 2.10 | 2.26 |
| 3178 | Maple | .53 | .65 | .74 | .71 | 1.85 | 1.92 | 2.11 | 2.01 |
| 3162 | Birch | .69 | .90 | .88 | .88 | 2.09 | 2.22 | 2.26 | 2.38 |
| 3242 | Birch | .57 | .77 | .81 | .75 | 1.61 | 1.70 | 1.60 | 1.34 |
| 3169 | Birch | .43 | .54 | .52 | .47 | 1.94 | 2.18 | 2.05 | 2.08 |
| 3165 | Birch | .74 | .93 | .91 | .83 | 2.06 | 2.08 | 2.32 | 2.26 |
| 3167 | Birch | .72 | .91 | .91 | .81 | 2.06 | 2.18 | 2.10 | 2.14 |
| 3181 | Birch | .72 | .87 | .90 | .90 | 1.99 | 2.04 | 2.16 | 2.13 |
| 3182 | Birch | .56 | .80 | .83 | .81 | 2.05 | 2.40 | 2.23 | 2.37 |
| 3249 | Black gum | .35 | .60 | .65 | .67 | 1.19 | 1.68 | 1.89 | 2.03 |
| 3255 | Black gum | .46 | .59 | .65 | .56 | 1.25 | 1.71 | 1.48 | 1.44 |
| 3130 | Spruce | .86 | 1.11 | 1.17 | 1.06 | ... | ... | ... | ... |
| 3215 | White spruce 50% Aspen 50% | .69 | .86 | .86 | .82 | 2.74 | 2.82 | 2.52 | 2.57 |
| 3219 | White spruce 50% Aspen 50% | .55 | .74 | .74 | .69 | 2.74 | 3.18 | 3.07 | 2.97 |
| 3250 | Hemlock 50% Aspen 50% | .63 | .81 | .84 | .81 | 1.73 | 2.06 | 1.77 | 1.60 |
| 3240 | White spruce 50% Maple 50% | .48 | .73 | .81 | .83 | 0.97 | 1.89 | 1.93 | 1.94 |
| 3241 | White spruce 50% Maple 50% | .48 | .70 | .83 | .80 | 1.86 | 1.98 | 2.13 | 2.13 |
| 3244 | Hemlock 50% Maple 50% | .45 | .68 | .82 | .83 | 1.90 | 2.11 | 2.11 | 2.10 |
| 3238 | White spruce 50% Birch 50% | .57 | .84 | .92 | .93 | 2.10 | 2.07 | 2.09 | 1.94 |
| 3239 | White spruce 50% Birch 50% | .62 | .98 | ... | .99 | 2.04 | 2.21 | 2.05 | 2.05 |
| 3243 | Hemlock 50% Birch 50% | .57 | .82 | .84 | .82 | 1.97 | 2.28 | 1.91 | 1.95 |

Details of all of the Laboratory experimental work plus Laboratory experience in several mills where hardwood sulphites have been produced on a commercial scale are at the disposal of anyone who may be interested and the opportunity to carry the results to further commercial demonstration or development would be welcomed.

Another interesting development in the hardwood pulping field has been the so-called semi-chemical process. This method of pulping represents one of the major researches at the Laboratory, where we are consistently seeking to discover ways and means of increasing the yield of pulp from a given quantity of wood. The method utilizes a mild alkaline pulping agent, namely, a mixture of sodium sulphite and sodium bicarbonate, which is impregnated into the chips either under steam or hydraulic pressure. Any excess chemical is then removed and cooking is completed by means of the liquor absorbed by and remaining in the chips. The chips are merely softened and must be subsequently pulped by passage through some type of disintegrating device such as a rod mill, which we have found very satisfactory. Yields are usually in excess of 75 per cent.

By using light-colored hardwoods and proper cooking conditions it is possible to prepare light-colored pulps suitable for cheap wrapper, print paper, and even for "news" when mixed with certain proportion of ground wood. Using the darker-colored woods results in dark-colored pulps which, since they are not bleachable by any method yet developed, must necessarily be incorporated in products where color is a matter of little importance. Semi-chemical pulps have considerable capacity for hydration and by proper rod mill or beater treatment can be processed to papers of considerable strength. They are therefore suitable for use in certain grades of wrapping and as a sub-

stitute for strong softwood fibers in liners, boards and similar articles.

At least three mills are operating on this process using hardwoods. Two of these produce a corrugating board from extracted chestnut chips. This semi-chemical chestnut board has the advantage of greater sheetage per ton and greater strength than the corresponding straw corrugating board and hence is in demand. Another commercial development is semi-chemical pulp for wrapping papers including butchers manila and several varieties of machine-glazed wrapper. This is also from southern wood, the plant being located in South Carolina where it utilizes southern gum.

In view of these commercial developments, and the experimental products which have been made at the Laboratory, we are confident that there is a broad field of use for semi-chemical pulps employing hardwoods as a raw material. These hardwoods may be the thinnings, tops, and crooked timber from either virgin- or second-growth stands, or they may just as well be the by-products of hardwood lumber industries. There seems every reason to believe that such a development should offer commercial success and that this method of utilization will be realized in the near future.

Probably one of the most striking projects in hardwood utilization in which the Laboratory has participated has been in news print manufacture. Something over a year ago the New Zealand Government requested the Laboratory to study certain species of wood, both native and introduced, grown in New Zealand. While the broad objective of the work was to determine the pulping qualities of the several species submitted, the principal desire of the cooperator was the production of newsprint preferably from the native species which would demonstrate the practicability of establishing a news print industry in New Zealand and insure that country an independent production of this commodity.

Of the several species included in the study, two appeared to have possibilities for news print, one being a hard wood known as tawa, similar to our American maple, and the other an introduced softwood, Insignis pine, which is identical with our California Monterey pine.

The use of the hardwoods in news print, although still dismissed by most members of the industry as impracticable, has been in the minds of many workers for quite a long time. For instance, some years ago this Laboratory, working in cooperation with the Brazilian Government, developed an all-sulphite paper from eucalyptus which appeared to have the possibilities of exploitation in Brazil. It was not considered as competitive with standard news print as produced in this country but indicated that an all-sulphite sheet was possible at a relatively low cost. Benjamin[4], of Australia has had the same idea and has recently reported experiments in which satisfactory news print papers were produced both experimentally and on a commercial scale from eucalyptus sulphite combined with ground wood from young or immature eucalypt woods.

It was, therefore, desired to study intensively the possibility of various combinations of hardwood and softwood sulphite with hardwood and softwood ground woods, seeking some combination of stocks which would be commercially feasible.

In this instance there was no favorable economic circumstance. New Zealand now secures much of its news print supply from Canada. There is no import duty and a local industry must expect to compete both in price and quality with standard news print as prepared in American and Canadian mills.

One of the first steps was to procure samples of standard news print from various sources throughout the United States and Canada. These were tested and the values shown in Table 4 were obtained and used as indicative of the quality which must be met. The next step was to secure reliable cost data and to set up an average cost figure which must be met. This was somewhat

[4] News print: Preliminary experiments on the grinding of immature eucalypts for mechanical pulp and possibilities of manufacturing news print in Australia. L. R. Benjamin. Australian Council for Scientific and Industrial Research Bulletin 31 (1927).

TABLE 4
PHYSICAL TESTS ON NORTH AMERICAN NEWS PRINT PAPERS

| Mills grouped by regions | Weight per ream 24"×36"—500, pounds | Thickness, inches | Apparent density, lbs. per ream per point | Furnish: Sulphite, per cent | Furnish: Ground wood, per cent | Bursting strength, pts. per lb. per ream | Tearing strength, gms. per lb. per ream | Folding Endurance, Machine Direction: In | Folding Endurance, Machine Direction: Across | Folding Endurance, Machine Direction: Average | Tensile Strength, Machine Direction: In | Tensile Strength, Machine Direction: Across | Tensile Strength, Machine Direction: Average | Stretch, Machine Direction: In, per cent | Stretch, Machine Direction: Across, per cent | Stretch, Machine Direction: Average, per cent | Color: Red, per cent | Color: Green, per cent | Color: Blue, per cent | Color: White, per cent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Number of Double Folds | | | Breaking Length in Meters | | | | | | | | | |
| General average | 32 | .0036 | 8.9 | 26 | 80 | .28 | .74 | 6.3 | 1.5 | 3.9 | 4,020 | 1,930 | 2,980 | 1.85 | 2.06 | 1.95 | 67 | 62 | 59 | 59 |
| U. S. A. average | 33 | .0037 | 8.9 | 27 | 79 | .28 | .74 | 5.8 | 1.4 | 3.6 | 4,010 | 2,040 | 3,020 | 1.57 | 1.89 | 1.73 | 67 | 61 | 57 | 57 |
| East U. S. A. average | 33 | .0037 | 8.9 | 25 | 82 | .27 | .72 | 5.1 | 1.5 | 3.3 | 3,960 | 2,040 | 3,000 | 1.36 | 1.59 | 1.48 | 68 | 63 | 60 | 60 |
| East Mills No. 1 | 32 | .0037 | 8.6 | 25 | 83 | .26 | .65 | 2.8 | 0.6 | 1.7 | 4,000 | 1,380 | 2,690 | 2.12 | 2.20 | 2.16 | .. | .. | .. | .. |
| 2 | 33 | .0034 | 9.7 | 25 | 83 | .28 | .67 | 3.8 | 1.0 | 2.4 | 3,870 | 2,530 | 3,200 | 2.32 | 2.92 | 2.62 | 71 | 63 | 59 | 59 |
| 3 | 34 | .0039 | 8.7 | 19 | 86 | .25 | .71 | 4.6 | 1.4 | 3.0 | 4,030 | 1,710 | 2,870 | 2.04 | 2.56 | 2.30 | 67 | 61 | 58 | 58 |
| 4 | 33 | .0039 | 8.5 | 29 | 75 | .29 | .82 | 6.6 | 1.6 | 4.1 | 4,190 | 2,290 | 3,240 | 1.00 | 1.14 | 1.07 | 67 | 65 | 63 | 63 |
| 5 | 32 | .0036 | 8.9 | | | .30 | .81 | 12.8 | 2.6 | 7.7 | 4,150 | 1,690 | 2,920 | 0.82 | 0.94 | 0.88 | 69 | 63 | 60 | 60 |
| 6 | 34 | .0037 | 9.2 | | | .30 | .71 | 5.4 | 2.2 | 3.8 | 3.990 | 2,710 | 3,350 | 0.94 | 1.02 | 0.98 | 70 | 64 | 61 | 61 |
| 7 | 34 | .0040 | 8.5 | 22 | 87 | .23 | .73 | 3.2 | 1.6 | 2.4 | 3.610 | 1,730 | 2,670 | 0.78 | 1.06 | 0.92 | 68 | 64 | 60 | 60 |
| 8 | 32 | .0037 | 8.6 | 29 | 79 | .27 | .69 | 2.0 | 1.0 | 1.5 | 3,850 | 2,230 | 3,040 | 0.86 | 0.88 | 0.87 | 65 | 61 | 61 | 61 |
| West U. S. A. average | 32 | .0037 | 8.6 | 32 | 71 | .28 | .77 | 7.6 | 1.1 | 4.4 | 4,150 | 2,040 | 3,090 | 2.13 | 2.69 | 2.41 | 63 | 56 | 52 | 52 |
| West Mills No. 9 | 33 | .0038 | 8.7 | 26 | 78 | .30 | .80 | 9.4 | 1.0 | 5.2 | 4,540 | 2,300 | 3,420 | 2.54 | 3.00 | 2.77 | .. | .. | .. | .. |
| 10 | 31 | .0037 | 8.4 | 37 | 64 | .29 | .84 | 8.2 | 1.2 | 4.7 | 4,240 | 1,800 | 3,020 | 2.04 | 2.60 | 2.32 | 60 | 52 | 46 | 46 |
| 11 | 33 | .0035 | 9.4 | .. | .. | .26 | .68 | 5.2 | 1.2 | 3.2 | 3,660 | 2,020 | 2,840 | 1.80 | 2.48 | 2.14 | 65 | 59 | 57 | 57 |
| Canadian average | 32 | .0035 | 9.1 | 26 | 80 | .29 | .74 | 7.2 | 1.8 | 4.5 | 4,040 | 1,770 | 2,900 | 2.29 | 2.33 | 2.31 | 68 | 64 | 61 | 61 |
| East Canadian average | 31 | .0034 | 9.1 | 26 | 82 | .29 | .72 | 4.9 | 1.6 | 3.3 | 3,750 | 1,720 | 2,730 | 2.26 | 2.37 | 2.31 | 69 | 64 | 62 | 62 |
| East Mills No. 12 | 31 | .0029 | 10.7 | .. | .. | .28 | .66 | 5.4 | 1.4 | 3.4 | 4,320 | 1,880 | 3,100 | 2.24 | 2.32 | 2.28 | 67 | 62 | 62 | 62 |
| 13 | 32 | .0035 | 9.1 | .. | .. | .32 | .72 | 7.8 | 1.6 | 4.7 | 3,970 | 1,770 | 2,870 | 2.24 | 2.28 | 2.26 | 66 | 63 | 61 | 61 |
| 14 | 31 | .0037 | 8.4 | .. | .. | .25 | .78 | 2.8 | 1.6 | 2.2 | 3,400 | 1,560 | 2,480 | 2.32 | 2.20 | 2.26 | 73 | 69 | 63 | 63 |
| 15 | 31 | .0038 | 8.2 | 26 | 83 | .31 | .73 | 5.0 | 1.6 | 3.3 | 3,910 | 1,630 | 2,770 | 2.50 | 2.84 | 2.67 | 72 | 67 | 65 | 65 |
| 16 | 31 | .0033 | 9.4 | 26 | 81 | .29 | .70 | 3.4 | 2.0 | 2.7 | 3,160 | 1,740 | 2,450 | 2.00 | 2.20 | 2.10 | 67 | 61 | 58 | 58 |
| West Canadian average | 33 | .0037 | 8.9 | 25 | 79 | .31 | .79 | 13.0 | 2.1 | 7.6 | 4,750 | 1,890 | 3,320 | 2.36 | 2.22 | 2.29 | 64 | 60 | 57 | 57 |
| West Mills No. 17 | 33 | .0040 | 8.3 | 25 | 79 | .27 | .86 | 13.0 | 2.2 | 7.6 | 4,280 | 1,720 | 3,000 | 2.20 | 2.08 | 2.14 | .. | .. | .. | .. |
| 18 | 32 | .0034 | 9.4 | 25 | 78 | .34 | .71 | 13.0 | 2.0 | 7.5 | 5,220 | 2,060 | 3,640 | 2.52 | 2.36 | 2.44 | 64 | 60 | 57 | 57 |
| East U. S. A. and Canadian average | 32 | .0036 | 8.9 | 25 | 82 | .28 | .72 | 5.0 | 1.6 | 3.3 | 3,880 | 1,910 | 2,900 | 1.71 | 1.89 | 1.80 | 69 | 64 | 61 | 61 |
| West U. S. A. and Canadian average | 32 | .0037 | 8.6 | 28 | 75 | .29 | .78 | 9.8 | 1.5 | 5.6 | 4,390 | 1,980 | 3,180 | 2.22 | 2.50 | 2.36 | 63 | 57 | 53 | 53 |

TABLE 5
AVERAGE PRODUCTION COST OF STANDARD 32-POUND SOFTWOOD NEWS PRINT IN NORTH AMERICA—SLUSH SYSTEM
(Costs are expressed in dollars per short ton of 2,000 pounds)

| | Sulphite | | Ground wood | | Paper machine | |
|---|---|---|---|---|---|---|
| CONVERSION | | | | | | |
| Labor | $2.10 | | $1.55 | | $3.15 | |
| Steam | 3.50 | | .10 | | 4.50 | |
| Power | .90 | | 3.00 | | .50 | |
| Supplies | .20 | | .10 | | .35 | |
| Repairs | 1.60 | | .80 | | 1.50 | |
| Pulpstones | .... | | .45 | | .... | |
| Wire and Clothing | .... | | .... | | 2.00 | |
| Finishing | .... | | .... | | 1.50 | |
| Total conversion | | $8.30 | | $6.00 | | $13.50 |
| RAW MATERIALS | | | | | | |
| Wood | 33.00 | | 16.50 | | | |
| Sulphur | 3.00 | | .... | | | |
| Limestone | .50 | | .... | | | |
| Total raw materials | | 36.50 | | 16.50 | | |
| FIXED CHARGES | | | | | | |
| Total fixed charges | | 3.80 | | 2.00 | | 4.25 |
| TOTAL PULP COST | | 48.60 | | 24.50 | | |
| NEWS PRINT | | | | | | |
| Sulphite furnish | 0.27 tons at $48.60 | | | | | 13.10 |
| Ground wood furnish | 0.80 tons at $24.50 | | | | | 19.60 |
| Selling, shipping and administration | | | | | | 6.00 |
| Total News Print Cost per Short Ton | | | | | | $56.45 |

more difficult than the quality comparison but was accomplished with fair success. The average cost of news print production in American mills is shown in Table 5. This value is admittedly somewhat higher than the cost in the more efficient mills with low priced wood and power and very modern equipment. It is, however, lower than newsprint can be produced in some of the older and less modern mills in the United States, and is based on the best information obtainable. The values shown are averages only.

In working out a furnish for news print we departed quite radically from the accepted standards of 25 to 30 per cent sulphite and the balance ground-wood pulp, and also from the more or less accepted theory that the ground wood must be prepared from spruce. The furnish finally selected as fulfilling both of the requisites of cost and quality comprised 15 per cent Insignis pine sulphite, 50 per cent tawa sulphite, and 35 per cent of tawa ground wood. Further mill study particularly of the variables of hardwood grinding can no doubt effect reduction in the softwood sulphite content if not its complete elimination. News print has recently been made in the Laboratory from domestic hardwoods containing 45 per cent hardwood sulphite, 50 per cent hardwood ground wood, and 5 per cent softwood sulphite.

To produce a satisfactory news print from these materials required a slight departure from ordinary news mill methods. For example, one of the difficulties encountered was the quantity of shives in the hardwood sulphite. This, by the way, is characteristic of hardwood sulphites apparently, and is one of the reasons why this product is often condemned without further consideration. These shives presented a refining problem which was solved in the Laboratory by the use of either the beater and Jordan, or the rod mill. The latter was particularly efficient.

A second factor was the necessity for developing strength in the sulphite. This of course is contrary to usual commercial practice in news print mills. The initial strength of the tawa sulphite, however, was relatively low and the tawa ground-wood fiber very short. The Insignis pine sulphite, while quite as strong as spruce did not supply all of the properties necessary to produce a satisfactory news print sheet and even the tawa sulphite required a certain amount of hydration.

Small rolls of papers made by the above furnish and process at the Laboratory were tested at one of the local papers, The *Wisconsin State Journal*, by putting them over the high speed press. The selected furnish was subjected to a cost analysis which indicated that it should be producible at a cost equivalent to, or slightly lower than American news print as shown in Table 6. The unit cost figures on which the items in Tables 5 and 6 are based are given in Table 7.

TABLE 6
AVERAGE PRODUCTION COST AT WHICH A STANDARD 32-POUND MIXED SOFTWOOD HARDWOOD NEWS PRINT CAN BE MANUFACTURED IN NORTH AMERICA.
SLUSH SYSTEM
(Costs are expressed in dollars per short ton of 2,000 pounds)

| | Sulphite | | Groundwood | Paper |
|---|---|---|---|---|
| | Softwood | Hardwood | hardwood | machine |
| CONVERSION | | | | |
| Labor | $2.10 | $2.10 | $1.55 | $3.15 |
| Steam | 3.50 | 3.50 | .10 | 4.50 |
| Power | 0.90 | 0.90 | 3.00 | 0.50 |
| Supplies | 0.20 | 0.20 | 0.10 | 0.35 |
| Repairs | 1.60 | 1.60 | 0.80 | 1.50 |
| Pulpstones | .... | .... | 0.45 | .... |
| Beating | .... | 0.50 | .... | .... |
| Wire and clothing | .... | .... | .... | 2.00 |
| Finishing | .... | .... | .... | 1.50 |
| Total conversion | 8.30 | 8.80 | 6.00 | 13.50 |
| RAW MATERIALS | | | | |
| Wood | 33.00 | 17.70 | 10.35 | |
| Sulphur | 3.00 | 3.00 | .... | |
| Limestone | .50 | .50 | .... | |
| Total raw materials | 36.50 | 21.20 | 10.35 | |
| FIXED CHARGES | | | | |
| Total fixed charges | 3.80 | 3.80 | 2.00 | 4.25 |
| TOTAL PULP COST | 48.60 | $33.80 | $18.35 | |
| NEWS PRINT | | | | |
| Sulphite furnish | 0.16 tons softwood at $48.60 per ton | | | $7.75 |
| | 0.53 tons hardwood at $33.80 per ton | | | 17.90 |
| Ground wood furnish | 0.38 tons hardwood at $18.35 per ton | | | 7.00 |
| Selling, shipping and administration | | | | 6.00 |
| TOTAL NEWS PRINT COST PER SHORT TON | | | | $56.40 |

TABLE 7
PULPWOOD AND OTHER COSTS AND THEIR DEVIATION
(Costs are expressed in dollars per short ton of 2,000 pounds)

| Item | Softwood | | Hardwood | |
|---|---|---|---|---|
| | Sulphite | Ground wood | Sulphite | Ground wood |
| PULPWOOD | | | | |
| (1) Wt. in lbs. per cu. ft. | 24 | 24 | 32 | 32 |
| (2) Cubic feet per cord | 90 | 90 | 85 | 85 |
| (3) Pounds per cord | 2,160 | 2,160 | 2,720 | 2,720 |
| (4) Pulp yield per cent | 46 | 93 | 48 | 82 |
| (5) Pulp pounds per cord | 1,000 | 2,000 | 1,300 | 2,230 |
| (6) Cords per ton pulp | 2 | 1.00 | 1.54 | 0.90 |
| (7) Cord cost f.o.b. mill | $14.50* | $14.50* | $10.00** | $10.00** |
| (8) Wood room cost per cord | 2.00 | 2.00 | 1.50 | 1.50 |
| (9) Total wood cost per cord | $16.50 | $16.50 | $11.50 | $11.50 |
| (10) Total wood cost per ton pulp (Item 6 × item 9) | $33.00 | $16.50 | $17.70 | $10.35 |
| SULPHUR | | | | |
| (11) Cost per ton f.o.b. mill | $21.00 | .... | $21.00 | .... |
| (12) Consumption lbs. per ton pulp | 284 | .... | 284 | .... |
| (13) Total sulphur cost per ton pulp | $3.00 | .... | $3.00 | .... |
| LIMESTONE | | | | |
| (14) Cost per ton f.o.b. mill | $3.00 | .... | $3.00 | .... |
| (15) Consumption lbs. per ton pulp | 340 | .... | 340 | .... |
| (16) Total limestone cost per ton pulp | $0.50 | .... | $0.50 | .... |
| POWER | | | | |
| (17) Cost per H.P. year | .... | $14 | .... | $14 |
| (18) Days operating | .... | 280 | .... | 280 |
| (19) Consumption H.P. per ton per day | .... | 60 | .... | 60 |
| (20) Total power cost per ton pulp | .... | $3.00 | .... | $3.00 |
| STEAM | PAPER MACHINE | | | |
| (21) Cost per 1,000 pounds | $0.43 | $0.43 | $0.43 | .... |
| (22) Consumption per ton pulp in pounds | 8,150 | 10,500 | 8,150 | .... |
| (24) Total steam cost per ton pulp | $3.50 | $4.50 | $3.50 | |

* Average value for three species—spruce, fir, and hemlock. Spruce and fir prices are higher and hemlock lower. Canadian prices are lower than those in the U. S. A.
** Average prices at which North American hardwoods are available.

It was then decided to carry the Laboratory results to a mill scale, a procedure which is always essential as a final step in demonstrating the value of any investigative work. Arrangements were accordingly made with the Great Western Paper Company at Ladysmith, Wisconsin, for pulping trials and a quantity of wood was forwarded there from New Zealand. The plant and equipment of the Ladysmith mill was turned over to the Laboratory staff and several tons of ground wood pulp and five sulphite cooks were made using the methods and cooking curves which had been found best in the experimental work. The grinding and cooking conditions used are shown in Tables 8 and 9.

TABLE 8
LOG OF GRINDER RUNS. GRINDING OF TAWA AT GREAT WESTERN PAPER COMPANY MILL, LADYSMITH, WIS.

| Date, Feb., 1928 | Shift | Hour | Stone surface (see footnotes 1 and 3) | Wood: Duration of grinding, hours | Wood: Racks filled [2] | Wood: Wood ground, cords | Production: Pulp laps: Wet weight, pounds | Pulp laps: Moisture content, per cent | Pulp laps: Dry weight, pounds | Pulp (dry): Per cord, pounds | Pulp (dry): Per 24 hours, tons |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Grinder run No. 1** | | | | | | | | | | | |
| 7 | 1 | 9:30 a.m. | A, B, C | | | | | | | | |
| | | 2:00 p.m. | C | | | | | | | | |
| | | 3:00 | | 5.5 | 5 | | 2,400 | 73.5 | 636 | | |
| | 2 | 6:30 | B, C | | | | | | | | |
| | | 10:30 | C | | | | | | | | |
| | | 11:00 | | 8 | 3 | | 4,660 | 73.5 | 1,235 | | |
| 8 | 3 | 2:30 a.m. | B, C | | | | | | | | |
| | | 6:30 | C | | | | | | | | |
| | | 7:00 | | 8 | 3 | | 4,705 | 73.5 | 1,247 | | |
| | 1 | 10:30 | | 3.5 | | | 2,985 | 72.6 | 818 | | |
| | | | Total | 25 | 11 | 2.75 | 14,750 | | 3,938 | 1,432 [4] | 1.89 |
| **Grinder run No. 2** | | | | | | | | | | | |
| 9 | 1 | 1:15 p.m. | B, C | 2 | 3 | | | | | | |
| | 2 | 4:00 | B, C | | | | | | | | |
| | | 7:00 | C | | | | | | | | |
| | | 10:00 | B, C | | | | | | | | |
| | | 11:00 | | 8 | 4 | | 4,410 | 72.0 | 1,235 | | |
| 10 | 3 | 1:00 a.m. | C | | | | | | | | |
| | | 4:00 | B, C | | | | | | | | |
| | | 7:00 | C | 8 | 3 | | 5,055 | 72.0 | 1,415 | | |
| | 1 | 10:00 | B, D | | | | | | | | |
| | | 2:00 p.m. | D | | | | | | | | |
| | | 3:00 | | 8 | 3 | | 5,305 | 74.0 | 1,380 | | |
| | 2 | 5:00 | D | | | | | | | | |
| | | 7:30 | | 4.5 | | | 4,540 | 74.0 | 1,180 | | |
| | | | Total | 30.5 | 13 | 3.25 | 19,310 | | 5,210 | 1,600 [4] | 2.05 |
| **Grinder run No. 3** | | | | | | | | | | | |
| 12 | 1 | 9:30 a.m. | B, C | | | | | | | | |
| | | 1:00 p.m. | C | | | | | | | | |
| | | 3:00 | | | | | | | | | |
| | 2 | 4:30 | C | 5.5 | 2 | | 3,285 | 69.9 | 985 | | |
| | | 7:30 | C | | | | | | | | |
| | | 9:30 | | 6.5 | 4 | | 7,180 | 69.9 | 2,160 | | |
| | | | Total | 12.0 | 6 | 1.5 | 10,465 | | 3,145 | 2,095 | 2.10 |
| | | | [4] Loss of fiber at white water saveall | | | | | | 45 | | |
| | | | Total yield of pulp (grinder run No. 3) | | | | | | 3,190 | 2,125 | 2.13 |

[1] Types of burrs used were as follows:
A—Smooth roll used for removing old surface;
B—Four point (4 teeth per inch) straight cut burr;
C—14 point diamond cut burr;
D—12 point diamond.

All burrs were new. They were used in the order indicated.

[2] One rack equals one-quarter cord. These were the number of racks filled on each shift and not the number of racks ground.

[3] Average pressure in cylinder—30 pounds. Speed of stone—180 r.p.m.

[4] An excessive loss of stock occurred in grinder runs 1 and 2 due to a faulty save-all. This condition was corrected prior to grinder run 3, which is more nearly representative of normal operating conditions.

The paper making equipment at Ladysmith was not entirely suited to the requirements so arrangements were made with the Consolidated Water Power and Paper Company for the final paper runs to be made in their mill at Wisconsin Rapids. There was a double advantage in this because the Consolidated mill was then in the process of changing some of their equipment from news print to book paper production and had just installed the necessary beating equipment which enables the hydration of the stock and the removal of the hardwood sulphite shives.

The first attempt, however, was not entirely successful. The paper met most of the physical requirements but contained shives in such amount as not to be considered satisfactory. Varying beater and Jordan treatments failed to solve this difficulty although the difficulty may possibly have been due to the fact that both the beaters and Jordans had been just installed and barely worn in before this work was undertaken.

The tawa sulphite, which introduced the shives into the stock, was accordingly shipped to the Laboratory and put through a rod mill, which broke down the shives satisfactorily. This pulp was returned to Wisconsin Rapids where it was run over the paper machine at 450 feet per minute with no machine difficulties. About ten tons of news print were shipped to New Zealand for demonstration by the newspapers there, and a little more than a ton was supplied to the *Wisconsin State Journal*, Madison, Wis., where it was used for the front and back pages of their daily issue of the second of August, 1928.

Essential data regarding the mill runs and quality of the papers

TABLE 10.—MILL BEATER FURNISH AND STRENGTH DATA—PAPER MACHINE RUNS AT

| Machine run No. and date, 1928 | Beater run No. | Kind of paper | Insignis pine sulphite: Per cent of total furnish | Insignis pine sulphite: Cook No. | Insignis pine sulphite: Wet pulp, pounds | Insignis pine sulphite: Per cent O. D. | Insignis pine sulphite: O. D. pulp, pounds | Insignis pine sulphite: Time beaten, hours | Tawa sulphite: Per cent of total furnish | Tawa sulphite: Cook No. | Tawa sulphite: Wet pulp, pounds | Tawa sulphite: Per cent O. D. | Tawa sulphite: O. D. pulp, pounds | Tawa sulphite: Time beaten alone, hours | Tawa sulphite: Freeness, cc. | Tawa sulphite: Total beaten alone, hours | Tawa ground wood: Per cent of total furnish | Tawa ground wood: Wet pulp, pounds | Tawa ground wood: Per cent O. D. | Tawa ground wood: O. D. pulp, pounds | Tawa ground wood: Time beaten, hours |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2—March 13 | 1 | News | 20 | 1 | 963 | 37.4 | 360 | 0.50 | 50 | 2&4 | 2412 | 37.6 | 900 | 5.75 | 340 | 6.25 | 30 | 1701 | 31.7 | 540 | 0.50 |
| | 2 | do | do | do | do | do | do | do | do | do | do | do | do | 4.75 | 320 | 5.25 | do | do | do | do | do |
| March 15 | 3 | do | do | do | do | do | do | do | do | do | do | do | do | 7.50 | 220 | 8.00 | do | do | do | do | do |
| | 4 | do | do | do | do | do | do | do | do | 3 | do | do | do | 7.00 | 250 | 7.50 | do | do | do | do | do |
| | 5 | do | do | do | do | do | do | do | do | do | do | do | do | 3.25 | 400 | 3.75 | do | do | do | do | do |
| | 6 | do | do | do | do | do | do | do | do | do | do | do | do | do | 390 | do | do | do | do | do | do |
| | 7 | do | do | do | 1177 | do | 440 | 1.50 | do | 2&4 | 2948 | do | 1100 | ... | 440 | 1.50 | do | 2079 | do | 660 | 1.50 |
| | 8 | do | do | do | do | do | do | do | do | 2 | do | do | do | do | 350 | do | do | do | do | do | do |
| | 9 | do | Wet broke with 5 per cent of pine-spruce pulp added | | | | | | | | | | | | | | | | | | |
| | 10 | do | Wet broke with 5 per cent of pine-spruce pulp added | | | | | | | | | | | | | | | | | | |
| | 11 | do | Wet broke with 5 per cent of pine-spruce pulp added | | | | | | | | | | | | | | | | | | |
| 3—April 7 | 1 | do | 20 | 1 | 1000 | 40 | 400 | ... | 50 | 2,3,4 | 2700 | 37 | 1000 | ... | ... | ... | 30 | 1500 | [3]40 | 600 | ... |
| | 2 | do | do | 1&5 | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do |
| | 3 | do | do | 5 | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do |
| | 4 | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do |
| | 5 | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do |
| | 6 | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do |
| | 7 | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do |
| | 8 | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do |
| | 9 | do | do | do | 780 | do | 312 | do | 51 | do | 2165 | do | 800 | do | do | do | 29 | 1145 | do | 458 | do |
| | 10 | M. F. | 52 | do | 2990 | do | 1195 | do | .. | .. | .... | .. | ... | do | do | do | 35 | 2010 | do | 805 | do |
| | 11 | Book | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do |
| | 12 | Dry finish | 50 | do | 2500 | do | 1000 | do | 50 | 2,3,4 | 2500 | 40 | 1000 | do | do | do | .. | .... | ... | ... | ... |
| | 13 | wrapping | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do | do |

Standard news print containing 26 per cent spruce or hemlock sulphite and 80 per cent spruce ground wood—Average figures .....

TABLE 9
COOKING DATA AND YIELDS OF SULPHITE PULPS PREPARED AT THE GREAT WESTERN PAPER COMPANY MILL, LADYSMITH, WIS.

| Cook No. | Species of wood | Acid composition: Moisture content, B.D. basis, per cent | Total $SO_2$, per cent | Free $SO_2$, per cent | Combined $SO_2$, per cent | Total weight of screened pulp, pounds | Oven-dry weight of pulp, per cent | Total weight of pulp oven-dry basis, pounds | Steam consumption, pounds |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Insignis pine | 52.5 | 5.33 | 3.77 | 1.56 | 22,540 | 32.5 | 7,315 | |
| 2 | Tawa No. 1 | 37.5 | 4.92 | 3.45 | 1.47 | 22,660 | 31.1 | 7,050 | 24,832 |
| 3 | Tawa No. 2 | 37.5 | 4.93 | 3.46 | 1.47 | 20,075 | 34.7 | 6,965 | |
| 4 | Tawa No 3 | 37.5 | 4.75 | 3.10 | 1.65 | 24,075 | 34.6 | 8,330 | 29,184 |
| 5 | 50% Insignis pine 50% Spruce | ... | 4.92 | 3.67 | 1.25 | 17,890 | 33.7 | 6,030 | |

prepared in this last run are given in Table 10. The percentage of pine sulphite was increased over the quantity used in Laboratory runs but this was apparently a needless precaution. This news print does not compare with the standard product so far as composition is concerned. It contains 65 to 70 per cent of sulphite pulp which might seem to indicate that such a proposition had no chance for success commercially. As a matter of fact, however, it appears that this paper can be made for slightly less than standard news print in an average mill. This is due to two facts: First, the hardwoods cost less per cord than the softwoods, now used for news print paper. Second, these hardwoods being of greater density and greater weight per cord give a higher yield of pulp per unit of volume, which is the way wood is bought.

We are optimistic over the possibilities of producing news print from hardwoods because we have demonstrated to our own satisfaction, and that of the commercial organizations which were instrumental in bringing this work to a successful conclusion, that these pulps can be produced and processed in standard equipment without difficulty. With but minor alterations any of the present day mills could shift to this type of product with a minimum of effort and expense.

We feel further that although this work was done upon New Zealand woods it can be easily adapted to the hardwoods of our own country and we are now engaged in a project to adapt these results to various American hardwoods. We believe there is every reason for success.

## T. R. Remsen Made Resident Manager

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., January 17, 1929.—Thomas R. Remsen, of Hudson Falls, has taken over his new duties as resident manager of the Union Bag and Paper Corporation, succeeding George S. Witham, Sr., who has been promoted to the position as manager of the production engineering department Mr. Remsen was formerly superintendent of the engineering, repairing, maintenance and power department of the local branch of the company. He has resided here for several years and was previously manager of a paper mill, ground wood mill and sulphite plant of the International Paper Company, at Three Rivers, Quebec. The degrees of Bachelor of Science and of Civil Engineer are held by Mr. Remsen as he was graduated from Dartmouth College in 1901. He is vice president of the Glens Falls Rotary Club, a member of the board of governors of the Glens Falls Outing Club and a member of the American Society of Civil Engineers.

Mr. Witham has been identified with the Union Bag and Paper Corporation for the past twenty-five years and in his new work he will deal with new inventions taken over by the firm. C. B. Saunders, of New York, is head of the department. Mr. Witham will continue to make his home in this place.

## Finnish Union Pulp Exports

WASHINGTON, D. C., January 16, 1929.—During the eleven months of last year, January to November, the Finnish Union exported 311,876 metric tons of sulphite and 82,455 tons of sulphate, a total of 394,331 tons, or more than 100,000 tons more than was exported during the corresponding period of 1927, while sulphite exports reached 231,457 tons and sulphate 60,314 tons.

TRIALS NOS. 2 AND 3
CONSOLIDATED WATER POWER AND PAPER CO., WISCONSIN RAPIDS, WIS.

| Clay | | Total furnish | | | | Strength data | | | | | | | | Color (Ives) | | | Opacity | | Gloss (Ingersoll) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Per cent of total furnish | Weight, pounds | O. D. pulp, pounds | Total beating time, hours | Freeness, cc. | Bursting factor hand sheets, pts./lb./ream | Reel No. | Wt. per ream, pounds | Thickness, inches | Tearing factor, gms./lb./ream | Bursting factor, pts./lb./ream | Tensile breaking length, meters | No. double folds | Stretch, per cent | Red | Green | Blue | Thickness, inches | Ives | Top | Bottom | Machine run No. and date, 1928 |
| .. | ... | 1800 | 6.25 | ... | ... | .. | 39.2 | .0034 | 0.69 | 0.31 | 3172 | 3 | 1.2 | | | | | | | | 2—March 13 |
| do | do | do | 5.25 | do | do | do | | | | | | | | | | | | | | | |
| do | do | do | 8.00 | 175 | 0.22 | do | 35.2 | .0029 | 0.69 | 0.30 | 2876 | 3 | 1.1 | | | | | | | | March 15 |
| do | do | do | 7.50 | ... | ... | do | | | | | | | | | | | | | | | |
| do | do | do | 3.75 | 160 | 0.24 | do | 34.4 | .0032 | 0.65 | 0.29 | 3137 | 3 | do | | | | | | | | |
| do | do | do | do | 175 | do | do | | | | | | | | | | | | | | | |
| do | do | 2200 | 1.50 | 225 | 0.19 | do | 37.6 | .0034 | 0.68 | 0.28 | 3164 | 2 | do | | | | | | | | |
| do | do | do | do | 230 | 0.21 | do | | | | | | | | | | | | | | | |
| do | do | do | Mixed | 190 | 0.26 | do | 34.0 | .0034 | 0.66 | 0.29 | 2938 | 3 | do | | | | | | | | |
| do | do | do | only | 190 | 0.23 | do | | | | | | | | | | | | | | | |
| do | do | do | do | 205 | 0.28 | do | | | | | | | | | | | | | | | |
| do | do | 2000 | 0.58 | 235 | 0.15 | 1 | 35.0 | .0030 | 0.67 | 0.27 | 2706 | 2 | 1.7 | 67 | 59 | 57 | .0030 | 96 | 25.5 | 29 | 3—April 7 |
| do | do | do | do | ... | ... | do | | | | | | | | | | | | | | | |
| do | do | do | do | 260 | ... | 2 | 34.0 | .0030 | 0.67 | 0.28 | 2950 | 3 | do | 68 | 60 | 58 | .0029 | 95 | 28 | 31 | |
| do | do | do | do | 255 | 0.22 | do | | | | | | | | | | | | | | | |
| do | do | do | do | 225 | 0.17 | 3 | 34.0 | .0030 | 0.60 | 0.25 | 2717 | 3 | do | 66 | 59 | 56 | .0028 | 94 | 30 | 32 | |
| do | do | do | do | 200 | 0.22 | 4 | | | | | | | | | | | | | | | |
| do | do | do | do | 190 | 0.22 | do | 33.0 | .0025 | 0.59 | 0.31 | 3043 | 3 | do | 67 | 60 | 57 | .0027 | 94 | 29 | 31 | |
| do | do | do | do | do | 0.21 | 5 | | | | | | | | | | | | | | | |
| do | do | 1570 | do | 230 | 0.25 | do | 35.0 | .0030 | 0.66 | 0.28 | 2830 | 3 | 1.9 | 67 | 59 | 57 | .0030 | 96 | 29 | 31 | |
| 13 | 300 | 2300 | do | ... | ... | 6 | | | | | | | | | | | | | | | |
| do | do | do | do | 250 | 0.26 | do | 38.1 | .0031 | 0.76 | 0.35 | 3480 | 4 | 1.8 | 70 | 64 | 59 | .0030 | 95 | 29 | 31.5 | |
| .. | ... | 2000 | do | 500 | 0.19 | 7 | 39.1 | .0033 | 0.97 | 0.36 | 3660 | 7 | 1.6 | 77 | 67 | 62 | .0034 | 91 | 29 | 27 | |
| do | do | do | do | do | 0.18 | | | | | | | | | | | | | | | | |
| ..... | ..... | | | | | | 32.0 | .0032 | 0.74 | 0.28 | 2980 | 3.9 | 1.9 | 67 | 62 | 59 | .0032 | .. | ... | ... | |

# Current Paper Trade Literature

## Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

**Bleaching With Hypochlorites.** H. Wenzl assignor to I. G. Farbenindustrie Ag. U. S. pat. 1,657,140, Jan. 24, 1928. In bleaching paper pulp with hypochlorite, aqueous calcium hypochlorite solution is brought into contact with material containing nickel in the prescence of an alkaline compound of an alkali metal and the temperature of the bleaching solution is adjusted to between 0 and 60 degrees C. The nickel-bearing material serves to catalyze the bleaching.—A.P.-C.

**Bleaching Groundwood.** A. O. Bragg, assignor to International Bleaching Corp. U. S. pat. 1,662,951, March 20, 1928. The pulp is circulated in water which is admixed with bisulphite, free sulphur dioxide, and another acid such as sulphuric acid, and is then washed with water until free from acid and other undesired substances. Sodium hyposulphite may also be added. —A.P.-C.

**Bleaching Kraft Pulp.** O. Kress assignor to American Lakes Paper Co. U. S. pat. 1,651,530 (Dec. 6, 1927). In order to bleach sulphate or kraft pulp to a white color without substantial decrease in strength or yield, a partial bleach is effected with an oxidizing bleaching agent, such as bleaching powder, and the material is then subjected to the action of a reducing bleaching treatment with a relatively small quantity of oxidizing bleaching agent.—A.P.-C.

**Bleaching of Sulphite Pulp.** R. Berggvist. Svensk Pappers-Tid. 30, 686-9 (1927). After applying a series of bleaches by various methods to an easy bleaching sulphite pulp, Berggvist concludes: (1) alkaline bleaching in large vats gives the best color with the lowest bleach consumption, (2) in alkaline bleaching the speed is not increased by the use of small vats, or a pH less than 10, (3) acid bleaching to hasten the reaction requires close control or the pulp may be severely damaged.—C.E.P.

**Chemical Analysis of Cotton. XIV. Rate of Oxycellulose Formation.** J. Textile Inst. 18, 135-167T (1927). Measurements have been made of the rate of consumption of oxygen and of change in the properties of the material when bleached cotton is treated with buffered solutions of hypochlorite, of constant active chlorine content but varying acidity or alkalinity. Within the range pH 5-10, characteristic of technical bleach, the rate of attack depends upon the acidity or alkalinity to an extent which accounts for differences encountered in practice which were difficult to explain. It is greatest at the neutral point, but slightly acid solutions are very susceptible to catalytic influences which increase their activity. For example, the trace of chromium left in cotton after treatment with dichromate very greatly enhances the damage by acid hypochlorite. Alkaline hypobromite solutions are more active than equivalent hypochlorites.—C.J.W.

**Clark's Radio Moisture Control Patent.** J. d'A. Clark. Eng. pat. 275,741, Aug. 18, 1927; Paper Trade J. 86, No. 8, 140-147 (Feb. 23, 1927). The paper is made the dielectric of an electric condenser, which is preferably constituted by a metal roll of the paper machine, the paper web and a plate adjacent the roll and of a shape conforming to that of the roll. The condenser forms part of an electrical oscillator circuit. By substituting for the material whose moisture content is to be measured a piece of similar material, but in a perfectly dry condition and with other conditions the same, the condition of the electrical circuit is varied and the difference between the two is a measure of the moisture content. The condenser may be connected to an inductance and electrical oscillation producing means in an electrical oscillatory circuit, and the condition which is varied by the condenser is the frequency of the oscillations in the circuit. The means to measure the frequency of the oscillations consists in a second oscillatory circuit having a frequency approaching that of the main oscillatory circuit to produce a beat note of the difference in frequencies of the two circuits. A small change in the frequency of the oscillatory circuit will immediately change the beat note, the frequency of which may be measured by a frequency meter. According to a modification of the invention the condenser is connected between the oscillation producing means and a rectifier, and means are provided to measure or indicate the current passing through the rectifier, such as a galvanometer. In a modified arrangement the condenser may be connected at one side to the oscillation producing means and to the rectifier and at the other to the other side of the rectifier or to earth when one side of the rectifier is earthed. Thus, when the oscillation producing means and the rectifier comprise thermionic tubes, their filaments will be connected and grounded and one side of the condenser will be grounded. A test condenser may be provided with switching means to connect it in the circuit in place of the condenser whose dielectric consists of the material under test. The test condenser may be set so that when connected into the circuit the reading of the means to measure or indicate the condition of the circuit will be that which should be obtained when the dielectric under test is of the required quality. The invention may be applied to the control of the thickness and texture as well as of the moisture content of paper.—A.P.-C.

**Vapor Control in Paper Machines.** H. W. Cowan. Pulp Paper Mag. Can., International No. 120-125 (Feb. 1928); Paper Mill 51, No. 4, 20-26 (Jan. 28, 1928). After an analysis of the conditions prevailing in the drying of paper by passing around steam heated cylinders and a discussion of the principles of evaporation and ventilation, the author describes a ventilating system which he has devised for paper machine rooms. It consists essentially in completly closing the back of the drier section by means of a light double wall, obtaining a slight reduction of pressure under the hood to prevent escape of any air therefrom into the machine room, exhausting a small proportion of the air to the outside, passing the remainder through a conditioning chamber which lowers its temperature to about 60 degrees F., and delivering it back into the room so that it naturally circulates back to the driers. The inventor claims that the heating of the air is obtained by its intimate contact with vapor evaporated from the sheet as it passes around the lower bank of drier cylinders, and that it does not cool these driers, thus ensuring maximum drying capacity of the lower driers, which ordinarily are cooled down considerably and lose a large portion of their efficiency through the cooling action of the atmosphere. Comparative figures are given of the steam cost for a 65 ton machine with and without the system, showing a net saving of $1.29 per ton of paper for the Cowan system.—A.P.-C.

**Slitter and Winder Troubles and Remedies.** L. J. List, Paper Mill 51, No. 22, 22, 62 (June 2, 1928); Paper Trade J. 86, No. 23, 85-86 (June 7, 1928). A discussion of the causes of and remedies for interweaving of rolls, telescoping of rolls and collapsing of center of rolls, together with a brief discussion of the requirements of high speed slitters and winders for which purpose combining of the shear cut principle with surface or drum winding is considered most suitable.—A.P.-C.

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# Some Dennison Plans And Practices Affecting Labor Turnover*

By M. F. Carpenter [1]

It is with some relief, that I step up here as a speaker rather than a listener, for many of the accounting terms used in today's speeches are absolutely foreign to me. I believe I am now more at home. Many speakers when they go on the platform have the usual excuse that they are batting for the president of the company, and often they are. In my case I am substituting for two men; they are the head of our accounting department and your Secretary, Mr. Burke.

A letter to the Dennison Manufacturing Company in regard to labor turnover was sent to the Cost Accounting Department by Mr. Burke, and the head of that department asked me if I would send in the figures covering labor turnover. I sent them directly to Mr. Burke. That's where I made my mistake. If I had sent my figures back to the Cost Accounting Department for them to forward it would logically have been their duty to appear before you today and attempt to justify the existence of those figures.

A second letter was received from Mr. Burke requesting that the Dennison Manufacturing Company furnish a speaker at this convention, and I replied that I thought the company would be glad to do so, having in mind that this would be a good job for the Accounting Department to handle and hoping they would accept in case a definite invitation was received. It was received, but I was elected. This situation reminds me of a story. (I have been trying all this time to get this story in.) There was once a hobo who was quite a character and who got a severe case of religion. It was of the Seventh Day Adventist type. He was expecting the world to come to an end any moment, and had speculated a great deal in regard to the future. One evening he took up quarters in a barn, made himself a bed in the hay and went to sleep thinking about all the good things in the millenium that was to come. In the morning he woke, smelt smoke and felt the heat of the fire, whereupon he exclaimed "Oh, Lord, in Hell, as I expected!"

### Methods and Cost Factors

One of the difficulties of the analysis of the labor turnover is that we cannot put our fingers on its cost. The cost accountant perhaps realizes this more than anyone else in an organization. The facts entering into the cost of labor turnover are far from obvious. The loss of a seasonal worker, the training of a new man, the effect on production, on the fellow workers, etc. are so complex that the cost becomes a matter of judgment with a great deal of guess work. But it is not the cost of labor turnover about which I intend to talk. I am going to outline some of the plans and practices of the Dennison Manufacturing Company affecting our labor turnover. How much they affect it, you men will have to be the judges. Fortunately it is not my task to prove anything to cost accountants.

There are all sorts of schemes to reduce labor turnover. The Dennison Manufacturing Company has often been accused of being too conservative. On the other hand, we have a reputation in our own locality of being too idealistic. Maybe we are both. It is hard to travel the medium road.

Quite a few days ago we had a distinguished looking gentleman call me to the front desk. In the interviewing room he tried to sell me a process of selection which he guaranteed would cut labor turnover in half. His method consisted of looking at the iris of the eye through a magnifying glass, then by dividing this iris into sections he was able to analyze the various abilities of the individual such as his mechanical sense, aggressiveness and a hundred qualities depending upon the pigmentation of each section. We were condemned at once as a narrow minded organization for not seriously considering his panacea for labor turnover.

There are many other schemes of a similar nature in which the big chin, the high forehead, and the distance the eyes are apart determine the executive, mechanical and other abilities an applicant may possess. Whatever we do we are convinced that labor turnover cannot be reduced through any easy method.

We feel that low labor turnover is often as costly as high labor turnover. We feel that new life in an organization is stimulating and that too low turnover often means low standard requirements, and with an easy labor market the missed opportunity of developing a more efficient personnel.

### Dennison Labor Turnover

Our percentage of labor turnover since 1911 has been as follows:

| | | | |
|---|---|---|---|
| 1911 | 68% | 1919 | 44% |
| 1912 | 61% | 1920 | 48% |
| 1913 | 55% | 1921 | 28% |
| 1914 | 37% | 1922 | 23% |
| 1915 | 28% | 1923 | 22% |
| 1916 | 37% | 1924 | 18% |
| 1917 | 49% | 1925 | 27% |
| 1918 | 65% | 1926 | 25% |
| | | 1927 | 19% |

We like to think of these figures within the last seven years as being very desirable. As an example: 1923 was considered a pros-

* Address delivered at Convention of the Cost Association of the Paper Industry, Statler Hotel, Cleveland, Ohio, October, 1928.

[1] Asst. Employment Mgr., Dennison Manufacturing Co., Framingham, Mass.

perous year in New England. At that time I was connected with another mill located about 20 miles from Framingham. Their labor turnover was over 100 per cent as compared with 22 per cent of the Dennison Manufacturing Company.

### Background and the Labor Supply

The main plant of the Dennison Manufacturing Company is located at Framingham which is about 20 miles west of Boston. The population of Framingham is around 24,000 with a number of outlying towns varying in size from 2,000 to 15,000 people. In Framingham we employ about 2600 people and 300 in Marlboro, a town located about 11 miles northwest. Our force is practically evenly divided between men and women. We have a large office and accounting force because of the nature of our product and the thousands of items that we manufacture. I believe there are over 100 people in the accounting department.

We have an easy labor market at the present time. It has not always been so. Right after the war there was a real scarcity of labor, especially of female labor. As a result, we moved our machine box department to Worcester, and in 1923 moved it again into Marlboro. Yet in spite of this labor shortage the labor turnover figures for these years were surprisingly low. Therefore, we feel there must have been other factors than an easy labor market to account for our turnover figures.

### Departmental Factors Controlling Labor Turnover—Selection

It seems to me that these controlling factors can be split into two main headings—departmental and general. Under departmental control of labor turnover we place good selection first. In our organization we have three interviewers, each one specializing in his own particular branch. For instance, one man is responsible for hiring for the office, another for the men in the factory, and a woman for the women in the factory. That is their main task, although they have other duties. To aid the interviewers in their judgment we have aptitude and trade tests. If we were hiring an accountant the sum total of his experiences would be taken into consideration, his general personality, and his references. In addition we would give him a test in simple arithmetic, a test in written directions, and a test in arithmetic reasoning. A mechanic would have to be able to prove to us that he had a sense of space, that is how one thing fits into another. This we do by having him place together a series of blocks, cut in irregular lines, yet fitting perfectly when one judges how to place each block in its exact position. It would be interesting to this group, undoubtedly, to know that we have found that good accountants and mechanics do not vary very much in their ability on the same type of tests.

### Training

There is a training program which is in charge of a specialist whose responsibility it is to see that the foremen and supervisors know the management policies thoroughly and to follow the progress of new employees through the supervisors on work which requires long periods of training. Production progress charts are plotted, expectancy curves are developed, and retainer rates established.

### Working Conditions

Working conditions must be right. Machinery must not be allowed to break down when people are on measured production, and if the machinery does break down skilled machinists must be available. All minor adjustments on machinery are taken care of by adjusters who specialize on one type of machine only. The work must be planned through the department. In other words, in order to keep labor turnover down, we feel every man must have his materials on hand when the job is to start and when finished there must be new materials for the new job. When a plant is manufacturing 10,000 items the planning of the work is an intricate problem and must be done well to gain the cooperation of the employees and to hold them to standards of efficiency. Certainly if the management is not doing its part they cannot expect the employees to do theirs. The material which they use must be of standard quality, otherwise the impressions from the printing machines or the box scoring machines will vary and discourage the operator. All our material is carefully purchased and checked by our chemical laboratory and must meet our standard requirements in every way. There is a factory not far from us and one of the reasons given by the employees seeking work with us for leaving that factory is the fact, that they can make good money when the material is coming good but there is a tendency on the part of the management when business is poor to use material that is poor, thus making the quality of the product such, that rejections are high and the returns for piece work correspondingly low. To us this would be a faulty departmental factor and we would expect a larger percentage of labor turnover under such conditions.

### Supervision

Foremen are not made today because there happens to be an opening. The opening is anticipated and the man for foremanship is carefully selected and trained in various ways. We have a plan which takes the man out of his division entirely and gives him a six months' training in accounting, planning, employment, and instructions in mechanical and research work. He has two or three hours a week of class work during which his progress is carefully checked and his reading matter pertaining to problems of management is reviewed. A group meeting for foreman assistants, or supervisors, during working hours has also been a policy of this company in which management and personnel procedures are discussed. We feel that our labor turnover is affected favorably by having trained supervisors, who understand our policies and direct the employees.

### Standard Practices

There must be a standard practice or the same rules and regulations to apply in all of the factory unless otherwise specifically stated. These procedures are published in book form and kept up to date by the Research Planning Department. Each foreman has his procedure book covering not only his own department's production work but also covering rules and regulations affecting personnel.

### Standard Requirements or Measured Standards

Not to be confused with standard practices we have standard requirements or measured standards for certain types of jobs that again should not be confused with our standard time requirements or a system related to piece work. Setting standard requirements on a job gives the man a definite idea of what is required. If he does not reach the standard he knows that he is not making the grade. This also gives us an opportunity to place a man under a system of retainer pay which definitely tells him how much he is producing and how much is being charged off to training on the new work, at the same time the man receives the full pay or the new starting rate. This system also helps us in transferring from one job to another.

### Standard Time or Rate System

Our standard time system is one composed of a base rate and class rate. If one completes a definite unit of work in a measured time, or less than the measured time, he will receive the base rate plus the class rate for that time and if completed in more than the standard time the class rate will be paid for the measured time and the base rate paid for the number of hours actually spent on the job. Once a rate is set, unless the method is changed, it is never reduced. When it is impossible to keep a man working on standard time he is paid 80%, 90% or 100% of his standard time work average. This average is determined every six weeks and must be for a total of at least 100 hours. About two-thirds of our employees are working on this system and we feel the re-

sults in wages and the manner in which the system is installed and used has an effect on labor turnover.

We like to believe that in the spirit of the organization there is a feeling which we might name "a fair deal expectancy." We have built this up through years of practice, with the cooperation of the employees through the Works Committee, in management and in handling personnel. As one small example: we feel that because a man is protected against being discharged unless his case is reviewed by the Employment Department or until the man, if he so desires, has an opportunity to present his case to the Works Committee representative, creates a feeling which is of direct benefit to our turnover figures. He knows that a personnel record is being kept of his production, attendance, quality, and errors, and that he is rated every six months on this card for his production, quality, general value, reliability, versatility and attendance. He also knows that the company has an internal promotion plan and that all new jobs are posted in the division and factory and that he has an opportunity to apply for them and thus gets a chance to make the most of his qualifications. If he does not obtain the job he is told why and in many cases why the other man succeeded. If he has real ambition and real stuff he is likely to consult our educational director, taking his advice, or on his own initiative he may qualify himself by attending night schools outside the factory. He may take advantage of some of the management courses given in the factory after hours.

### General Factors Affecting Labor Turnover Wages

In referring to the general plans and practices affecting labor turnover, I believe, it would be best to classify them under Wages, Unemployment Fund, Works Committee, and Partnership Plan. I still believe the most important factor in reducing labor turnover is the payment of good wages. It is the first and foremost thing to consider, but it is by no means the whole story. The percentage of labor turnover for women in the factory has always been about the same as that of the men. Realizing that situation, we find that we are paying the women $5.00 more a week than the average paid to women, in industry in Massachusetts. Our women average $21.00 a week as compared to $16.00 in this State. Considering the large amount of unskilled work we have, the factor of low wages rarely enters our turnover. About 50% of our men as compared with 90% of our women are working on standard time. For this reason mainly the men do not receive any greater average pay than the rest of the State. Because there is so much work not on standard time produced by the men, we have divided the jobs into six classifications, and thus the employees know what is the minimum, standard, and maximum of each of these jobs. If he feels that he is more capable than that classified by his task he usually asks for a transfer to a better type of work.

$140,000 was accumulated from the surplus prior to 1919 and after years of careful planning to level off the peak of sales and production it was decided to establish the Unemployment Fund. As a result, since that time we have been paying 60% and 80% of the employee's wages in case they are laid off for temporary lack of work. There are restrictions on this. We cannot spend more than $50,000 in any 12 months, or if the Fund gets below the $50,000 mark it stops automatically until the management and the employees are able to reconsider the whole plan and to determine when and how it shall be replenished. The Fund has been running since 1919 and we have spent a total of a little over $70,000. The expenditures as compared with the average weekly payroll are as follows:—

| Year | Annual expenditures from fund | Average weekly payroll |
|---|---|---|
| 1920 | $2,439.77 | $62,942.75 |
| 1921 | 22,989.02 | 61,040.05 |
| 1922 | 1,510.15 | 64,505.70 |
| 1923 | 1,348.29 | 72,030.90 |
| 1924 | 2,084.11 | 75,447.25 |
| 1925 | 8,882.68 | 75,696.08 |
| 1926 | 20,942.70 | 76,909.39 |
| 1927 | 15,465.27 | 74,522.50 |
| 1928 (to October) | 6,227.42 | 72,000.00 |

Including the interest, which has been turned back into the Fund, the average expenditure has been about $4,000. a year. This costs in gross sales about 1c. for every $300. About one-half the total expended on unemployment has been paid out to make up the difference between a man's regular wage and that paid on temporary transfer during dull periods.

### Works Committee

Before the Unemployment Fund was established the general plan was presented by the president of the company to a new group of workers known as the Works Committee for consideration. The working out of this Unemployment Fund was one of the first major functions of the Works Committee. This committee was organized in 1919 and has been one of the most active of active employee groups ever since. It is representative of the employees in that a member is elected annually by popular vote to represent a group of about 50 employees from his section of the company. The committee of about 60 people meets twice a month independent of management members. It considers policies that management wishes to install and recommends to management for action policies which they wish to have enforced. Detailed studies of these policies are made by various conference committees which are composed of from 4 to 6 members, half of whom are management and the other half employees. These committees act in a staff or advisory capacity and forward their findings to the Works Committee. Another phase of the Works Committee is that of settling grievances. These are never aired in the general Works Committee meetings but are taken up through the divisional Works Committee men to the Central Committee, which is composed of nine leading representatives. After hearing all the evidence in the case the Central Committee forwards its findings to the Works Manager for approval or whatever action he may take. Members of the Works Committee have been a good source through which real and truthful information regarding company policies may be conveyed to all the employees. In this way a large number of false rumors which otherwise would affect production and labor turnover are stopped at their source. Also we feel that a spirit of cooperation permeates the whole working force which without representation would be less likely obtained.

### Partnership Plan

The last of the more important general factors affecting labor turnover is the Partnership Plan. This Plan has been in effect since 1911 among the managerial group and since 1920 among the employee group. Since its establishment the distribution of the Industrial Partnership Plan has been as follows:—

| MANAGERIAL INDUSTRIAL PLAN | | | EMPLOYMENT INDUSTRIAL PLAN | | |
|---|---|---|---|---|---|
| Year (March) | Shares Distributed (Par—$10) | No. of Managerial Partners | Year (March) | Shares Distributed (Par—$10) | No. of Employee Partners |
| 1913 | 15,122 | 167 | 1921 | 36,266 | 1418 |
| 1914 | 18,604 | 211 | 1922 | 10,201 | 1439 |
| 1915 | 12,779 | 218 | 1923 | 19,711 | 1661 |
| 1916 | 12,884 | 228 | 1924 | 24,295 | 1836 |
| 1917 | 43,752 | 260 | 1925 | 5,901 | 2093 |
| 1918 | 19,015 | 288 | 1926 | 16,602 | 2318 |
| 1919 | 30,740 | 320 | 1927 | 17,635 | 2363 |
| 1920 | 57,363 | 364 | 1928 (to Oct.) | 9,677 | 2500 |
| 1921 | 72,479 | 377 | | | |
| 1922 | 22,838 | 374 | | | |
| 1923 | 40,672 | 389 | | | |
| 1924 | 50,908 | 393 | | | |
| 1925 | 13,850 | 412 | | | |
| 1926 | 34,510 | 394 | | | |
| 1927 | 37,899 | 413 | | | |
| 1928 (to Oct.) | 22,980 | 392 | | | |

The managerial partners share on the basis of salary, whereas, the employees share on the basis of service . The amount of money to be distributed is the sum left after the Preferred Stockholders 8% dividend, and the charges relating to overhead have been deducted. This plan will continue in practice and the actual management of the company will be in the hands of the present partners, and the voting stock will be held by them, as long as the company continues to show profits. In case three years elapse in

(Continued on page 88)

which no profits are available the preferred stockholders reserve the right to take over the management of the business.

We believe that the employee realizes at the end of each year, not only what the profits have been, but where the profits are spent and this makes him a better worker through his cooperation in such things as waste, and in seeking to promote only those things which are good for the organization as a whole. This plan has recently been changed among the employees to include those of five years standing as compared with those of two years standing, and as such will not affect labor turnover as it has in the past.

### Other Associations

More difficult to estimate than any of the preceding plans in their effect on labor turnover are the following: the Men's Mutual Relief Association, Savings Bank Insurance in which the company cooperates with the State to make insurance policies available at rock bottom prices, the Dennison Savings Fund which includes the Christmas and vacation funds, the Credit Union, the Dennison Associates Club House, the Suggestion system offering us over 4,000 suggestions last year of which 1300 were accepted, the Lunch Room, the Library, Shop Paper, and other minor services such as tax advice, room registry, transportation facilities, cooperative buying, and vacation advice. Most of the activities mentioned above are carried on by the employees themselves. It has been proven to our satisfaction that the results are more satisfactory wherever the individual and not management has felt the responsibility of making an activity a success.

We cannot help but feel that the place of the individual in the production and management scheme of the Dennison Manufacturing Company tends toward making him feel that he is a responsible and definite part of the whole and that management is not only interested in his general well being through the various general plans as outlined but also in seeing that his opportunity and well being on the production floor is given thorough consideration. How much all these plans and practices affect labor turnover, we again state we do not know. We can only ask you to serve as impartial judges.

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## HEARING ON CLAY AND CASEIN

(*Continued from page 19*)

Wash. "Not so far as I know nor so far, I believe, as my organization has known," Mr. Moscrip replied.

### Increase Asserted in Imports of Casein

The text of the section of the brief of the National Cooperative Milk Producers Association dealing with the competitive costs of casein follows:

"Foreign imports of casein have increased and casein prices have declined until the price today is 3 cents a pound below last year. The present price of casein, as quoted by the *Oil, Paint and Drug Reporter,* for domestic 20-30 mesh in carload lots is 14¼@15 cents per pound. A year ago it was 17½@18 cents. If past history of prices, production and imports are any indication of what is going to happen, without additional tariff protection, the price of casein will go much lower and the returns for skimmed milk put into casein will be so low as to discourage production in this country. This will affect prices on all manufactured skimmed milk products and fluid milk price returns.

"At the request of users of casein who wished a decrease in the duty, the U. S. Tariff Commission in March, 1923, made an investigation of the differences in the cost of production of casein in the United States and in competing foreign countries for the purpose of Section 315 of Title III of the Tariff Act of 1922. Three years later in March, 1928, a report was submitted to the President in which the Tariff Commission said 'That in its judgment no findings of fact pointing to any change in the rate of duty on casein are warranted by the data which it had been found possible to secure.'

"The Tariff Commission report that the cost of conversion of skimmed milk into casein was the same in the Argentine as in the United States. This seems impossible in the light of the lower labor costs in the Argentine and the fact that the Argentine casein is sun dried while ours is dried by use of steam and power.

### Argentine Producers Said to Have Refused Data

"The Tariff Commission state that the cost of conversion and delivery to New York of casein was about 5½ cents per pound of casein. It came down to a question of competition between the agricultural producer of milk in the Argentine and in the United States. The Argentine producers refused to give the Commission's experts access to their books or to disclose the prices paid for whole milk. (Ref. Page 21, Report of Commission to the President on Casein.)

"We are certainly warranted in believing that the refusal of the Argentine producers to give the prices paid for whole milk indicated that the prices paid and cost of production were exceedingly low. The Tariff Commission did state (page 13 of Casein Report) that the price paid for whole milk in the Argentine was 96 cents per hundred pounds or 2 cents per quart. Our domestic milk price at that time was from two to three times as great. This is distinctly a question of the protection to the dairy farmer against low cost foreign competition in the Argentine.

### Conversion Costs in Argentine

"The Tariff Commission found that conversion cost in the Argentine plus transportation to New York was approximately 5½ cents per pound. (Ref. Page 14, Commission's Report.) On an 8-cent per pound tariff, the domestic producer would be assured of at least a price of casein equal to 13½ cents per pound since the Argentine producer would probably not deliver casein to the United States at a price which did not at least cover conversion, transportation, selling costs and duty. At the present prices 14¼ to 15 cents, the domestic producer obtains after deducting 5½ cents conversion cost, about 28 cents per hundredweight for skimmed milk or about ½ cent per quart. This figure is based on a three-pound yield of casein per 100 pounds of skimmed milk as given by the Tariff Commission's Report (Page 8). Most commercial producers figure a yield of 2.7 pounds per 100 pounds of skimmed milk. It is reasonable to believe that the cost of producing milk in the United States is at least ½ cent per quart greater than in the Argentine and that a duty of 8 cents per pound on casein would do no more than reflect part at least of the difference in the cost of milk producing in the Argentine and in the United States.

### Exports of Coated Paper Said to Have Increased

"The opponents of a tariff increase on casein who are primarily the coated paper manufacturers and who use 75 per cent of the casein produced and imported, will probably tell this Committee that a duty of 8 cents per pound on casein will ruin their industry and particularly their foreign business. The same statement was made before the Tariff Commission in the casein hearing and yet from 1922 to 1927 the exports of coated paper increased from 3,764,000 pounds to 5,973,000 pounds while the domestic production increased from 97,868 tons in 1921 to 158,726 tons in 1923 and to 180,462 tons in 1925. (U. S. Census of Mfg.) This indicates how entirely inaccurate their position was.

### Consumption of Casein

"The Tariff Commission in the casein report to the President stated on Page 3 that the consumption of casein ranged from 1.45 to 6.9 pounds per 100 pounds of coated paper and averaged about 5.5 pounds. Based on these figures, an increase in the duty of casein of 5½ cents per pound would mean an increased cost of coated paper of 3 mills per pound assuming that the increase in the tariff would be reflected in an increased price for casein. This is a very small effect upon the price level of coated paper and this Committee should not refuse the dairy industry adequate protection in order that the coated manufacturers may be able to buy casein at a price lower than a price which will give a reasonable return for the farmers' skimmed milk."

BOLTON QUALITY

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EAGLE KNIFE & BAR WORKS

Lawrence, Mass.

The only firm making KNIVES for every machine from wood pile to finishing room.

*It's the KNIVES that do the work!*

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*"Higher Efficiency in Power Transmission"*

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150 H.P.

Motor Pulley 27¾"
Beater Pulley 72"
Centers 16 Ft.

Reduce your manufacturing cost is the word passed to operating heads of the modern paper mill.

This up-to-date mill specified "TENTACULAR" for beaters on performance of "TENTACULAR" on other beaters.

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6 SLOTS—5 SLOTS—4½ SLOTS—4 SLOTS—PER INCH

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Rolled Phosphor Bronze and Copper Plates for Rotary Screens

*Sole Manufacturers of the Union Witham Screen Plate Vat and Fastener*

# Imports of Paper and Paper Stock

**NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS**

## NEW YORK IMPORTS

WEEK ENDING JANUARY 12, 1929

### SUMMARY

Cigarette paper .....19 bls., 1,966 cs.
Wall paper .....119 bls., 68 cs.
Paper hangings .....7 bls.
News print .....11,952 rolls
Printing paper .....44 rolls, 8 cs.
Wrapping paper .....34 crates, 96 rolls, 64 cs.
Packing paper .....38 cs.
Decalcomania paper .....43 cs.
Tissue paper .....71 cs.
Transparent greaseproof paper .....19 cs.
Photo paper .....1 cs.
Basic paper .....108 cs.
Colored paper .....40 cs.
Drawing paper .....61 cs.
Surface coated paper .....130 cs.
Baryta coated paper .....21 cs.
Metal paper .....14 cs.
Aluminum paper .....24 cs.
Pigment paper .....1 cs.
Stencil paper and ink .....91 cs.
Cellophane paper .....4 cs.
Straw board .....171 rolls
Miscellaneous paper .....107 bls., 111 cs.

### CIGARETTE PAPER

American Tobacco Co., Sarcoxie, Bordeaux, 1,032 cs.
De Manduit Paper Corp., Sarcoxie, St. Nazaire, 422 cs.
Max Spiegel & Son, Pres. Garfield, Genoa, 19 bls.
P. J. Schweitzer, Pres. Garfield, Marseilles, 153 cs.
British American Tobacco Co., Mauretania, Southampton, 167 cs.
Standard Products Corp., Ile de France, Havre, 192 cs.

### WALL PAPER

R. F. Downing & Co., Huronian, London, 15 bls., 4 cs.
F. J. Emmerich, Deutschland, Hamburg, 33 bls., 1 cs.
Wedeman, Godknecht & Lally, Deutschland, Hamburg, 6 bls.
Globe Shipping Co., Deutschland, Hamburg, 34 bls.
F. A. Binder, G. Washington, Bremen, 31 bls.
J. E. Bernard & Co., Arabic, Antwerp, 26 cs.
The Prager Co., Inc., Arabic, Antwerp, 37 cs.

### PAPER HANGINGS

A. C. Dodman, Jr., Inc., Adriatic, Liverpool, 7 bls.

### NEWS PRINT

Bank of Montreal, Humberarm, Cornerbrook, 11,393 rolls.
Perkins, Goodwin & Co., Deutschland, Hamburg, 559 rolls.

### PRINTING PAPER

E. Dietzgen & Co., Westerdyk, Rotterdam, 3 cs.
Kennedy & Co., Westerdyk, Rotterdam, 5 cs.
Keuffel & Esser Co., Deutschland, Hamburg, 44 rolls.

### WRAPPING PAPER

C. Steiner, Deutschland, Hamburg, 12 cs.
Fidelity Trust Co., G. Washington, Bremen, 55 rolls.
Chemical National Bank, Gripsholm, Gothenburg, 41 rolls.
Standard Products Corp., Arabic, Antwerp, 8 cs.
Birn & Wachenheim, Arabic, Antwerp, 34 crates, 44 cs.

### PACKING PAPER

Universal Car Loading Co., Westerdyk, Rotterdam, 10 cs.
Haule Wax Paper Manfg. Co., Westerdyk, Rotterdam, 25 cs.
Universal Car Loading Co., G. Washington, Bremen, 3 cs.

### DECALCOMANIA PAPER

C. W. Sellers, Deutschland, Hamburg, 41 cs.
Phoenix Shipping Co., Deutschland, Hamburg, 2 cs.

### TISSUE PAPER

Old Master Paper & Pulp Co., Deutschland, Hamburg, 55 cs.
P. J. Schweitzer, Pres. Garfield, Marseilles, 16 cs.

### TRANSPARENT GREASEPROOF PAPER

Central Union Trust Co., Deutschland, Hamburg, 19 cs.

### PHOTO PAPER

Guaranty Trust Co., Deutschland, Hamburg, 1 cs.

### BASIC PAPER

Globe Shipping Co., G. Washington, Bremen, 56 cs.
American Express Co., Arabic, Antwerp, 52 cs.

### COLORED PAPER

S. Gilbert, G. Washington, Bremen, 40 cs.

### DRAWING PAPER

Favor, Ruhl & Co., Huronian, London, 5 cs.
International Forwarding Co., Carlier, Antwerp, 17 cs.
I. Henschel & Co., Duetschland, Hamburg, 2 cs.
Keuffel & Esser Co., Deutschland, Hamburg, 37 cs.

### SURFACE COATED PAPER

Globe Shipping Co., Deutschland, Hamburg, 16 cs.
Phoenix Shipping Co., Deutschland, Hamburg, 1 cs.
P. C. Zuhlke, Arabic, Antwerp, 95 cs.
Gevaert Co. of America, Arabic, Antwerp, 18 cs.

### BARYTA COATED PAPER

J. H. Schroeder Banking Corp., G. Washington, Bremen, 21 cs.

### METAL PAPER

Hensel, Bruckman & Lorbacher, G. Washington, Bremen, 14 cs.

### ALUMINUM PAPER

Catty Foil Co., Arabic, Antwerp, 24 cs.

### PIGMENT PAPER

J. J. Murphy & Co., G. Washington, Bremen, 1 cs.

### STENCIL PAPER AND INK

Arlac Dry Stencil Co., Deutschland, Hamburg, 91 cs.

### CELLOPHANE PAPER

Dyson Shipping Co., Collamer, Havre, 4 cs.

### STRAW BOARD

Hygrade Eagle Corrugated Paper Corp., Westerdyk, Rotterdam, 171 rolls.

### MISCELLANEOUS PAPER

P. H. Petry & Co., Westerdyk, Rotterdam, 9 cs.
E. Dietzgen & Co., Westerdyk, Rotterdam, 31 cs.
Heemsoth, Basse & Co., Westerdyk, Rotterdam, 21 bls.
J. Beckhard & Co., Westerdyk, Rotterdam, 3 cs.
Judson Freight Forwarding Co., Deutschland, Hamburg, 4 cs.
J. Henschel & Co., Deutschland, Hamburg, 15 cs.
C. K. MacAlpine & Co., Gripsholm, Gothenburg, 86 bls.
F. C. Strype, Ile de France, Havre, 8 cs.
C. H. Boulin, Ile de France, Havre, 34 cs.
Kolesch & Co., C. of Alton, Rotterdam, 7 cs.

### RAGS, BAGGINGS, ETC.

Bank of The Manhattan Co., Couer d'Alene, Constantinople, 350 bls. rags.
Brown Bros. & Co., Huronian, London, 28 bls. rags.
W. Schall & Co., Westerdyk, Rotterdam, 103 bls. bagging.
W. Schall & Co., Westerdyk, Rotterdam, 30 bls. rags.
American Exchange Irving Trust Co., Westerdyk, Rotterdam, 32 bls. cotton waste.
B. D. Kaplan, Collamer, Havre, 40 bls. rags.
D. I. Murphy, Collamer, Havre, 73 bls. rags.
Darmstadt, Scott & Courtney, Collamer, Havre, 141 bls. jute waste.
E. Butterworth & Co., Saco, Antwerp, 18 bls. rags.
American Exchange Irving Trust Co., Saco, Antwerp, 115 bls. flax waste.
Chase National Bank, Saco, Antwerp, 219 bls. flax waste.
E. J. Keller Co., Inc., Saco, ——, 99 bls. flax waste.
Castle & Overton, Inc., Carlier, Antwerp, 69 bls. rags.
W. Schall & Co., Carlier, Antwerp, 260 bls. rags.
E. J. Keller Co., Inc., Wendover, ——, 160 bls. rags.
Whaling Waste Products Co., Deutschland, Hamburg, 75 bls. jute waste.
Chase National Bank, Deutschland, Hamburg, 31 bls. rags.
Castle & Overton, Inc., Deutschland, Hamburg, 30 bls. rags.
Amsinck, Sonne & Co., G. Washington, Bremen, 19 bls. rags.
L. Leibowitz, G. Washington, Bremen, 12 bls. rags.
Robert Blank, G. Washington, Bremen, 18 bls. rags.
Bank of The United States, G. Washington, Bremen, 10 bls. rags.
Bank of The Manhattan Co., G. Washington, Bremen, 19 bls. rags.
E. Mayer, G. Washington, Bremen, 40 bls. rags.
Anglo South American Trust Co., G. Washington, Bremen, 77 bls. cotton waste.
Bank of The Manhattan Co., Adriatic, Liverpool, 14 bls. rags.
Myers Lipman Woolstock Co., Adriatic, Liverpool, 10 bls. rags.
A. W. Fenton, Inc., Caledonia, Glasgow, 78 bls. bagging.
Brown Bros. & Co., Caledonia, Glasgow, 27 bls. paper stock.
New England Waste Co., Hagen, Hamburg, 165 bls. cotton waste.
A. W. Fenton, Inc., Hagen, Hamburg, 105 bls. rags.
Chase National Bank, Arabic, Antwerp, 5 bls. rags.
A. W. Fenton, Inc., City of Alton, Rotterdam, 91 bls. rags.
Green, Hamilton & Co., City of Alton, Rotterdam, 310 bls. cotton waste.
H. Schimmel, City of Alton, Rotterdam, 191 bls. cotton waste.
Equitable Trust Co., City of Alton, Rotterdam, 13 bls. rags.
E. J. Keller Co., Inc., City of Alton, ——, 51 bls. rags.
V. Galaup, Extavia, Bari, 139 bls. rags.
C. R. Spence & Co., New York City, Bristol, 84 bls. rags.
Castle & Overton, Inc., Bannack, Manchester, 78 bls. bagging.
E. Mayer, Bannack, Manchester, 56 bls. new cuttings.
Goschens & Cunliffe, Bannack, Manchester, 40 bls. rags.
P. J. Schweitzer, Hellen, Marseilles, 42 bls. rags.
Darmstadt, Scott & Courtney, Hellen, Barcelona, 198 bls. rags.
Goldman, Sachs & Co., Hellen, Barcelona, 60 bls. rags.
E. J. Keller Co., Inc., Hellen, ——, 141 bls. rags.
Castle & Overton, Inc., Sarcoxie, France, 39 bls. rags.

### OLD ROPE

Brown Bros. & Co., Westerdyk, Rotterdam, 194 bls.
Brown Bros. & Co., N. Y. City, Bristol, 199 bls.
Brown Bros. & Co., Hellen, Barcelona, 94 coils.
W. Steck & Co., Westerdyk, Rotterdam, 147 coils.
American Exchange Irving Trust Co., Westerdyk, Rotterdam, 30 bls.
Chase National Bank, Hagen, Hamburg, 240 bls.

### CHINA CLAY

L. A. Salomon & Bros., N. Y. City, Bristol, 400 bags.

### WOOD PULP

Agasote Millboard Co., Humberarm, Cornerbrook, 616 rolls wood pulp.
Bulkley, Dunton & Co., Consul Olsson, ——, 4,680 bls. wood pulp, 775 tons.
E. M. Sergeant & Co., Consul Olsson, Hernosand, 1,620 bls. sulphate, 270 tons.
J. Andersen & Co., Consul Olsson, Hernosand, 1,800 bls. sulphate, 860 tons.
J. Andersen & Co., Consul Olsson, Hernosand, 6,150 bls. sulphite, 1,025 tons.
J. Andersen & Co., Tyrifjord, Greaker, 2,160 bls. sulphite.
O. E. Kiaer, Tyrifjord, Greaker, 750 bls. sulphite.
American Exchange Irving Trust Co., Hagen, Hamburg, 304 bls. wood pulp, 61 tons.
Castle & Overton, Inc., Hagen, Hamburg, 1,235 bls. wood pulp, 185 tons.
E. M. Sergeant & Co., Gripsholm, Gothenburg, 175 bls. sulphite.
E. M. Sergeant & Co., Gripsholm, Gothenburg, 897 bls. dry soda pulp.
Johanson, Wales & Sparre, Inc., Gripsholm, Gothenburg, 1,064 bls. dry soda pulp.
Price & Pierce, Ltd., Gripsholm, Gothenburg, 750 bls. wood pulp.

### WOOD PULP BOARDS

Hensel, Bruckman & Lorbacher, Deutschland, Hamburg, 80 bls., 10 tons.

*(Continued on page 80)*

## SOME PAPER MILL USERS OF *Badenhausen Boilers Superheaters :: Preheaters*

Geo. F. Hardy, Consulting Engineer, New York
For Southern Paper Co., two orders, total 4700 H.P.
For St. Croix Paper Co. ..... 1200 H.P.
For Brown Paper Mill Co. ..... 3430 H.P.
Central Paper Co., Muskegon, Mich., four orders, total ..... 3100 H.P.
Philadelphia Paper Mfg. Co., Phila., three orders total ..... 2400 H.P.
Jessup & Moore Paper Co., Phila., four orders, total ..... 4750 H.P.
Ontario Paper Co., Ltd.
For Daily Newspaper Co., North Tonawanda, N. Y. ..... 2034 H.P.
Filer Fibre Company, Filer City, Mich. ..... 1500 H.P.
John Lang Paper Co., Philadelphia, Pa. ..... 416 H.P.
Bayless Manufacturing Corp., Austin, Pa. ..... 1300 H.P.
Northern Board & Paper Co., San Francisco, Cal., two orders, total ..... 400 H.P.
Crown Williamette Paper Co., San Francisco, Cal., two orders, total ..... 750 H.P.
Delaware Hard Fibre Co., Wilmington, Del., two orders, total ..... 920 H.P.
Kieckhefer Container Co., Delair, N. J. ..... 1800 H.P.

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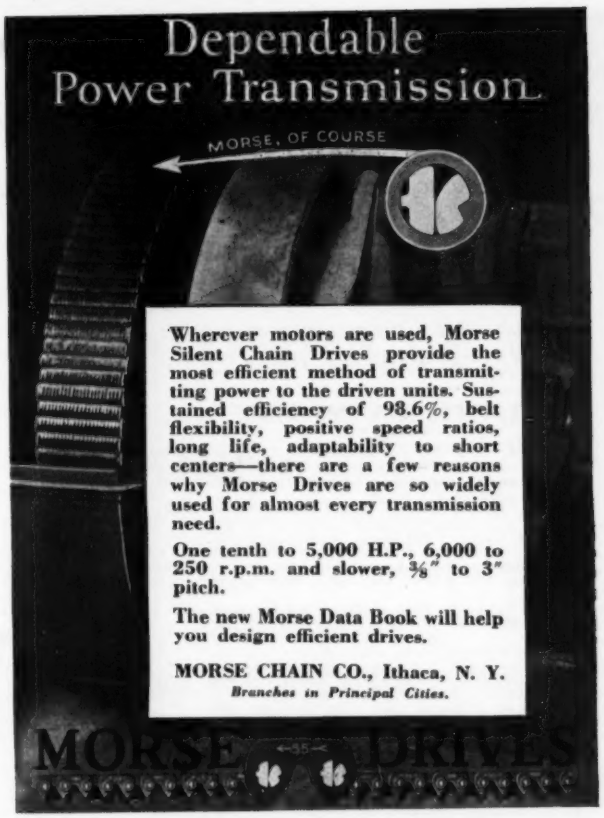
1019 Guardian Life Bldg., St. Paul

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Wherever motors are used, Morse Silent Chain Drives provide the most efficient method of transmitting power to the driven units. Sustained efficiency of 98.6%, belt flexibility, positive speed ratios, long life, adaptability to short centers—there are a few reasons why Morse Drives are so widely used for almost every transmission need.
One tenth to 5,000 H.P., 6,000 to 250 r.p.m. and slower, ⅜" to 3" pitch.
The new Morse Data Book will help you design efficient drives.
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A Shipment of Special Tanks and Kilns for a Process Industry Plant.

## COATESVILLE PRODUCTS

For nearly Fifty years our products have been used in the Pulp and Paper industries—not only Coatesville Fire Tube Boilers of all types but also our Steel Tanks, Stacks, Breechings, and Special Steel Plate work. We ask for your inquiries and will work for your orders.

Our Engineering Department will gladly suggest best methods of construction to suit your particular requirements.

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## Keep on with Albany Grease —it's no experiment!

For 61 years Albany Grease has been used with pronounced success on paper mill equipment. XXX Albany Grease is especially adaptable for rolls—it's a high temperature grease. Try as you will you cannot find another lubricant to equal its quality. It is a 100% pure tallow compound—never drips. Try a can!

Trade Mark

If you want an extra fine mineral oil lubricant, use Albany Pressure grease—soft, medium, hard, also graphite and transmission.

*Always look for the Albany Grease Trade Mark —Refuse Substitutes.*

Your dealer can supply you. If not, write us.
ADAMS COOK'S SONS, INC., 6 Varick St., N. Y.

## ALBANY GREASE

# Imports of Paper and Paper Stock

(*Continued from page 78*)

## PORTLAND IMPORTS

WEEK ENDING JANUARY 12, 1929

Bulkley, Dunton & Co., Consul Corfitzen, ——, 4,200 bls. wood pulp.

## NORFOLK IMPORTS

WEEK ENDING JANUARY 12, 1929

Castle & Overton, Inc., West Arrow, Antwerp, 42 bls. rags.
Castle & Overton, Inc., Harburg, Germany, 708 bls. wood pulp.

## PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 12, 1929

J. Andersen & Co., Consul Olsson, Hernosand, 3,750 bls. sulphate, 750 tons.
Bulkley, Dunton & Co., Consul Olsson, ——, 4,560 bls. wood pulp, 760 tons.
Castle & Overton, Inc., Saco, Antwerp, 690 bls. rags.
D. I. Murphy, Saco, Antwerp, 79 bls. rags.
E. Butterworth & Co., Inc., Saco, Antwerp, 46 bls. rags.
Fidelity Trust Co., Saco, Antwerp, 164 bls. rags.
Brown Bros. & Co., Saco, Antwerp, 108 bls. rags.
National Shawmut Bank, Saco, Antwerp, 11 bls. rags.
International By-Products Co., Saco, Antwerp, 93 bls. rags.
Katzenstein & Keene, Inc., Saco, Antwerp, 925 bls. rags.
C. J. Webb & Sons, Saco, Antwerp, 3 bls. rags.
M. Friedman, Saco, Antwerp, 80 bls. rags.
E. J. Keller Co., Inc., Saco, ——, 99 bls. rags.
A. Hurst & Co., Sarcoxie, Bordeaux, 40 bls. rags.
D. I. Murphy, Sarcoxie, St. Nazaire, 406 bls. rags.
Goldman, Sachs & Co., Sarcoxie, St. Nazaire, 92 bls. rags.
S. Birkenstein & Sons, Sarcoxie, St. Nazaire, 439 bls. old rope.
E. J. Keller Co., Inc., Sarcoxie, ——, 237 bls. rags.
American Exchange Irving Trust Co., London Mariner, London, 44 bls. old rope.
Pan American Wallpaper & Paint Co., London Mariner, London, 2 bls. wall paper.
Philadelphia National Bank, London Mariner, London, 214 bls. rags.
The Lang Co., London Mariner, London, 108 bls. rags.
Brown Bros. & Co., London Mariner, London, 40 coils old rope.
Old Colony Trust Co., N. Y. City, Bristol, 153 coils old rope.
J. A. Steer, N. Y. City, Bristol, 255 bls. waste paper.
E. J. Keller Co., Inc., Burma, ——, 116 bls. rags.
E. J. Keller Co., Inc., Schwarzwald, ——, 229 bls. rags.
E. J. Keller Co., Inc., Bilderdyk, ——, 139 bls. rags.
E. J. Keller Co., Inc., Koln, ——, 646 bls. wood pulp.
Bulkley, Dunton & Co., Consul Corfitzen, ——, 4,440 bls. wood pulp.
Castle & Overton, Inc., ——, Germany, 107 bls. rags.
Castle & Overton, Inc., Kolen, Germany, 548 bls. rags.
Castle & Overton, Inc., Nivian, Ireland, 91 bls. rags.
Castle & Overton, Inc., Amasis, Germany, 7,691 bls. wood pulp.

## BALTIMORE IMPORTS

WEEK ENDING JANUARY 12, 1929

Pagel, Horton & Co., Bird City, Husum, 22,200 bls. sulphate, 3,700 tons.
Pagel, Horton & Co., Bird City, Hornefors, 2,400 bls. sulphate, 400 tons.
S. Shapira & Sons, Collamer, Havre, 98 bls. rags.
Congoleum Nairn Co., Collamer, Havre, 911 bls. rags.
National Bank of Commerce, Collamer, Havre, 97 bls. rags.
Castle & Overton, Inc Collamer, Havre, 163 bls. rags.
Congoleum Nairn Co., Collamer, Dunkirk, 1,007 bls. rags.
S. Shapira & Sons, Collamer, Dunkirk, 22 bls. rags.
Congoleum Nairn Co., Sarcoxie, Bordeaux, 1,185 bls. rags.
Baltimore Trust Co., Sarcoxie, Bordeaux, 40 bls. rags.
S. Shapira & Sons, Sarcoxie, St. Nazaire, 111 bls. rags.
Bulkley, Dunton & Co., Zenada, ——, 125 bls. wood pulp.
Bulkley, Dunton & Co., Matti, ——, 12,250 bls. wood pulp.
Bulkley, Dunton & Co., Ena de Larrinaga, ——, 525 bls. wood pulp.
Castle & Overton, Inc., Harburg, Germany, 2,882 bls. wood pulp.

## BOSTON IMPORTS

WEEK ENDING JANUARY 12, 1929

True & McClelland, Saco, Antwerp, 171 bls. rags.
F. J. Fawcett, Saco, Antwerp, 144 bls. flax waste.
E. Butterworth & Co., Inc., Saco, Antwerp, 315 bls. flax waste.
E. Butterworth & Co., Inc., Saco, Antwerp, 27 bls. rags.
E. Butterworth & Co., Inc., Saco, Antwerp, 179 bls. bagging.
Spaulding Fibre Co., Saco, Antwerp, 179 bls. flax waste.
Meredith Linen Mills, Saco, Antwerp, 148 bls. flax waste.
American Express Co., Saco, Antwerp, 166 rolls paper.
National Shawmut Bank, Saco, Antwerp, 137 bls. rags.
Brown Bros. & Co., Francisco, Hull, 59 coils old rope.
Brown Bros. & Co., Francisco, Hull, 173 bls. paper stock.
Bulkley, Dunton & Co., Ambridge, ——, 274 bls. wood pulp.
Bulkley, Dunton & Co., Sac City, ——, 276 bls. wood pulp.
Bulkley, Dunton & Co., Wanja, ——, 4,135 bls. wood pulp.
Castle & Overton, Inc., Harburg, Germany, 1,422 bls. wood pulp.

## To Hear Hinde & Dauch Case at Indianapolis

BROOKVILLE, N. Y., January 14, 1929.—The case of the Hinde & Dauch Paper Company against a group of railroads relating to freight rates on shipments of paper board from the Watertown mill of the company to Eastern trunk lines and central freight territory will be heard before the Interstate Commerce Commission at Indianapolis, Ind., on next Tuesday morning. The first hearing was held at Sandusky, Ohio, several weeks ago. The New York Development Association of Watertown intervened in the case in behalf of the paper company. Clarence C. Smith, secretary, and a representative of the law firm of Clark and La Roe, of Washington, appeared for the development association at the last meeting. Because a number of the important witnesses were unable to be present at the Sandusky hearing the case was postponed to the later date at Indianapolis.

Joseph A. Quinlan, traffic manager of the St. Regis Paper Company and its associated companies, left this week to testify at the Indianapolis hearing. He will represent the development body and will present testimony in behalf of the Hinde & Dauch Co.

## Brier Brown Leaves Finch, Pruyn & Co.

GLENS FALLS, N. Y., January 17, 1929.—Brier Brown, formerly of this city, has resigned as general manager of the Greenwich branch of Finch, Pruyn & Co. to embark in other business. He has been manager of the Greenwich branch for several years and resigned a position in the Glens Falls office to take the former position. Gerald Lockrow, of Glens Falls, has been placed in charge of the Greenwich branch temporarily and a permanent manager will be chosen within a short time.

## News Print Service Bureau to Meet

In accordance with regular custom, the annual meeting of the News Print Service Bureau will be held on Thursday, January 24, at the Ritz-Carlton Hotel in Montreal, Que. The meeting will take place immediately after the annual luncheon of the Technical Section of the Canadian Pulp and Paper Association and the matters to be considered include the usual reports upon news print production and consumption, the election of officers for 1929.

Bureau members will find much of interest on the programs of the various sections of the Canadian Association on the 23rd and 24th and the exercises in connection with the opening of the Pulp and Paper Research Institute on January 25.

## A Correction

Martin Cantine and Walter Randall who appeared before the Ways and Means Committee of the House at its hearing on Casein on January 8th were speaking as representatives of the coated paper manufacturers and not of the American Paper and Pulp Association, as indicated in the issue of the PAPER TRADE JOURNAL of January 10. The Association's General Tariff Committee will present the industry's tariff needs at the House Committee's hearings on Papers and Books, February 13 and 14.

## Longview Paper Co. Ships Paper East

PORTLAND, Ore., January 11, 1929.—About 800 tons of paper and fiber board was shipped by the Longview Fiber Company to Atlantic ports January 8 by the steamer Kentuckian of the American-Hawaiian line. This was one of the largest weekly consignments from this mill.

Here is Crandall Style 250, a superior High Pressure Packing, made of 90% pure asbestos, with a non-vulcanizing rubber cushion placed at the back. It has the same high quality of all Crandall Braided Asbestos and High Pressure Packings. Excellent in packing against High Pressure Steam, Oil, Acid, etc. Built to withstand vulcanization. Sample on request.

**Crandall Packing Co.**

*Perfected Packings for Every Purpose*

Palmyra, N. Y., Boston, Chicago, Cleveland, Houston, New York, Pittsburgh, Philadelphia, Kansas City, Mo., St. Louis

**83 YEARS EXPERIENCE**

*In Making*

Felts for Paper Manufacturers certainly recommends our ability to satisfactorily serve your requirements

OUR **TRIUNE** AND
**MULTIPLE PLY**
**DRYER FELTS**

English Weave—Fine Face Felt in Three, Four, Five and Six Ply—60" to 214" in width—insure large production. Absolutely no felt marks in paper.

**FITCHBURG DUCK MILLS**

*Established 1844*

FITCHBURG, MASS.

*The*

**ST. REGIS PAPER COMPANY**

**Daily Capacity**
**525 TONS**

**Newsprint**
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**Specialties**

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Fourdrinier Wires, all widths up to 300 inches

**DIMOND WIRES**

**NEUMEYER & DIMOND**

*Established 1904*

82-92 Beaver St. New York

## New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, January 16, 1929.

Demand for the various grades of paper was more active during the past week than at any time since the holidays and conditions in the local paper market are gradually improving. Prices are becoming steadier and there are not so many reports of concessions around. Sales forces of the leading paper organizations are mostly optimistic and are preparing for a strenuous 1929 campaign.

Consumption of news print is well up to the average for the time of the year. No contract prices for 1929 have been announced as yet. Conferences are still being held and the leading executives are endeavoring to reach a satisfactory agreement regarding contract quotations for the current year. An official announcement is expected at any time now.

The paper board market continues to show signs of improvement and prices are decidedly firmer. Chip board is now being offered at $35 per ton while news board is selling for $37.50. Single manila lined chip is quoted at $47.50 per ton. The fine paper market is moderately active and tissues are in seasonal request. The coarse paper market is rather unsettled at present although wrapping paper is moving in a normal manner.

### Mechanical Pulp

While the demand for both domestic and foreign ground wood is slightly better than of late, no radical changes have been recorded. Shipments against contract are proceeding in normal volume for the season. Prices are generally steady to firm and shading is infrequent. Inquiries for future business are fairly numerous and the outlook for the future is encouraging.

### Chemical Pulp

Now that the inventory period is out of the way, the chemical pulp market is exhibiting greater activity. Offerings are rather limited, however, and both foreign and domestic producers are well sold ahead on several of the grades. Bleached sulphite is still in an exceptionally strong position while the demand for unbleached sulphite is persistent. Prices remain unaltered from the previously recorded levels.

### Old Rope and Bagging

Conditions in the old rope market are fairly satisfactory. Both domestic and imported No. 1 manila rope are in seasonal request at steady prices. Trading in the bagging market was light during the past week. Roofing bagging was moderately active but other grades were quiet. Prices are holding to schedule, however, in most instances.

### Rags

Most of the business transacted in the domestic rag market was along routine lines. There was an increased inquiry for cotton cuttings. Roofing rags were in seasonal request. Prices remain practically unchanged. Imported rags are still moving slowly but a general improvement in the situation is predicted by some observers in the near future.

### Waste Paper

The local paper stock market is exhibiting a fairly steady undertone. Mill interest in the better grades is well sustained. Book stock is again attracting particular attention. The lower grades of waste paper continue rather quiet but conditions should improve shortly with the closing of the inventory season. Prices remain steady and unchanged, in most instances.

### Twine

The twine market is apparently marking time at present. Most of the transactions recorded lately have been for immediate requirements. Prices are generally holding up to schedule. Demand for wrapping paper should improve after the usual holiday lull in which case the twine industry would benefit thereby.

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### Woodlands Section Meeting

The ninth annual meeting of the Woodlands Section of the American Paper and Pulp Association will take place at ten o'clock on Wednesday, February 20, in the Sun Parlor of the Waldorf Astoria Hotel, New York City. An interesting program has been prepared, and all who are interested in the work of the Woodlands Section and in general forestry are cordially invited to attend. A luncheon will be served at 12:30 in the meeting room, at which a nationally known speaker will discuss topics of interest to foresters. Reservations should be made for this luncheon as soon as possible, with the secretary of the section.

A tentative program of the meeting follows: The Organization of the Woodlands Section for Constructive Work; Forestry and Paper Manufacture; Transportation Charges and Pulpwood Supplies; Variations in Costs of Logging Pulpwood of Different Sizes of Timber; Logging Costs and Forestry; Rates of Growth of Pulpwood Species in Different Regions; Selection Cutting in Pulpwood Forestry; Planting for Pulpwood; Cruising as an Aid in Cutting Operations; National Timberland Owners Association; Virginia Wood Waste Survey and Progress of Forestry in the Paper Industry.

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### St. Regis Paper Co. Elects Directors

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 17, 1929.—Stockholders of the St. Regis Paper Company and subsidiary firms held their annual meeting here this week and elected directors for the ensuing year. No other business was taken up at the meeting. Directors elected by the St. Regis Company are Jonathan Bulkley, Floyd L. Carlisle, W. H. Dick, Ralph B. Maltby, Alvah Miller, H. Edmund Machold, A. M. Dick, Charles E. Norris, Roy K. Ferguson, B. B. Taggart, all of New York, and D. C. Middleton, John N. Carlisle, Frank A. Empsall and D. M. Anderson, of Watertown, and J. J. Warren of Brownville.

Stockholders of the Power Corporation of New York elected as directors D. M. Anderson, Floyd L. Carlisle, John N. Carlisle, W. P. Creager, W. K. Dick, F. A. Empsall, R. K. Ferguson, H. G. Davis, R. B. Maltby, D. C. Middleton, Alvah Miller, J. J Warren, T. J. Walsh, Jonathan Bulkley, J. F. Schoelkoph, F. D. Corey, H. S. Lewis, M. S. Wilder, H. A. Furman, C. E. Norris and F. A. Rogers.

The Norwood & St. Lawrence Railroad Company elected as directors F. L. Carlisle, John N. Carlisle, W. K. Ferguson, H. E. Machold, W. K. Dick, R. B. Maltby, C. B. Martin, C. E. Norris and C T. Jewell. W. H. Versfelt, assistant treasurer of the St. Regis Paper Company, was the only official of any of the companies present at the meeting.

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### To Be Purchasing Agent for Canada Paper Co.

MONTREAL, Que., January 16, 1929.—John H. Metcalf, general purchasing agent for Howard Smith Paper Mills Limited, has also been appointed purchasing agent for Canada Paper Company Limited of Windsor Mills, Que. He is located at 407 McGill street, Montreal.

Gets more heat from a pound of coal than any other combustion system
Capacities up to 700,000 pounds of steam per hour

The TAYLOR UNIT and A-E-CO FURNACE ARMOR

American Engineering Company, Philadelphia

Canadian sales and service by Affiliated Engineering Companies, Ltd., Southam Bldg., Montreal

West Virginia Pulp and Paper Company

*Manufacturers of*

SUPERCALENDERED and MACHINE FINISHED BOOK and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers.

*also*

Bleached Spruce Sulphite and Soda, Kraft Pulp

200 Fifth Avenue New York — 732 Sherman Street Chicago
503 Market St., San Francisco, Cal.
122 East 7th St., Los Angeles, Cal.
Sixth and Chestnut Sts., Philadelphia, Pa.

BROWN COMPANY'S ALPHA GRADES

of Purified Cellulose Fibre representing some of the valuable results of our many years of research in cellulose chemistry.

SUPER ALPHA

for strength in Tear, Fold and Mullen. Super Alpha equals the higher grades of rags in the manufacture of fine papers.

EASY-BEATING ALPHA

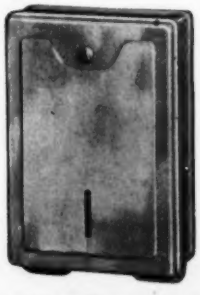
This is a grade developed for mills of limited beating capacity. While not giving results equal to Super Alpha, it produces wonderful paper on short beating.

REGULAR ALPHA

This is a grade midway between Super and Easy-Beating.

*Use ALPHA for Quality*

BROWN COMPANY FOUNDED 1883 Portland, Maine



GRIFFITH-HOPE

Dispensing Cabinets AND Fixtures ARE

The STANDARD of the PAPER TRADE

For Towels, Toilet, Napkins, Etc.

GRIFFITH-HOPE CO., West Allis, Wisc.

# Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, January 16, 1929.

BLANC FIXE.—The blanc fixe market was moderately active during the past week. Prices generally remain unchanged and shading is infrequent. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Conditions in the bleaching powder market are practically unchanged. Shipments against contract are moving in a most satisfactory manner. Prices are steady and unchanged, in most instances. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—No radical changes were reported in the casein market. Demand is seasonal and prices are steady. Domestic casein is still quoted at from 14¾ cents to 15¾ cents per pound, while imported casein is selling at from 15¼ cents to 15¾ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Most of the contract business for the current year has been booked. Supplies are moving into consumption in good volume. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is exhibiting a strong undertone. Shipments against contract are proceeding at a normal pace. Imported china clay is still quoted at from $15 to $25 per ton, ship side. Domestic paper making clay is selling at from $8.00 to $13.00 per ton, at mine.

CHLORINE.—Steadiness prevails in the chlorine market. A good volume of contract business has been booked for 1929 delivery. Chlorine is still quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—Trading in the rosin market was fairly active. At the naval stores, the grades of gum rosin used in the paper mills are now quoted at from $9.40 to $9.65 per 280 pounds, ex dock, in barrels. Wood rosin is selling at from $7.40 to $8.20 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Offerings of salt cake are rather limited at present. With a persistent demand prevailing, prices rule steady to firm. The contract movement is well up to average. Salt cake is quoted at from $16 to $18 per ton, while chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—Producers of soda ash are well booked ahead for 1929. Contract shipments of this product are moving in excellent volume. Prices generally remain unaltered Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½ and in barrels, $1.55.

STARCH.—There have been no changes in the starch market since the recently reported decline. Demand for starch is moderately active, and the contract movement is normal. Special paper making starch is quoted at $3.67 per 100 pounds, in bags, and at $3.84 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Supplies of sulphate of alumina are moving in normal volume. Offerings are large enough to take care of current demands. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.45 and iron free at from $1.90 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—The sulphur market is in a sound position. Prices rule steady to firm. Sulphur is quoted at $18 per ton, at mine, in lots of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and near by car loads the quotation is $21 per ton.

TALC.—Business in the talc market is seasonal and trading is mostly along routine lines. Contract shipments are proceeding at a normal pace. Prices remain unchanged. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines, while imported talc is selling at from $18 to $20 per ton, ship side.

# Market Quotations

## Paper

(F. o. b. Mill)

| | | |
|---|---|---|
| Ledgers | 11.00 | @38.00 |
| Bonds | 9.00 | @45.00 |
| **Writings—** | | |
| Extra Superfine | 14.00 | @32.00 |
| Superfine | 14.00 | @32.00 |
| Tub sized | 10.00 | @15.00 |
| Engine sized | 8.00 | @11.00 |
| **News—** | | |
| Rolls, contract | Nominal | |
| Rolls, transient | Nominal | |
| Sheets | Nominal | |
| Side Runs | Nominal | |
| **Book, Cased—** | | |
| S. & S. C. | 6.00 | @ 7.50 |
| M. F. | 5.75 | @ 7.00 |
| Coated and Enamel | 7.50 | @12.00 |
| Lithograph | 7.50 | @12.00 |
| **Tissues—Per Ream—** | | |
| White No. 1 | .75 | @ 1.00 |
| Anti-Tarnish | 1.35 | @ 1.90 |
| Colored | 1.00 | @ 2.00 |
| White No. 2 | .75 | @ .80 |
| Kraft | 1.00 | @ 1.10 |
| Manila | .75 | @ .80 |
| **Kraft—** | | |
| No. 1 Domestic | 6.25 | @ 6.50 |
| No. 2 Domestic | 4.00 | @ 4.25 |
| Southern | 3.75 | @ 4.00 |
| Imported | 6.50 | @ 7.00 |
| **Manila—** | | |
| No. 1 Jute | 9.00 | @ 9.25 |
| No. 2 Jute | 7.75 | @ 8.50 |
| No. 1 Wood | 4.75 | @ 5.25 |
| No. 2 Wood | 4.00 | @ 4.50 |
| Butchers | 3.75 | @ 4.25 |
| **Fibre Papers—** | | |
| No. 1 Fibre | 5.00 | @ 5.50 |
| No. 2 Fibre | 4.75 | @ 5.25 |
| Common Bogus | 2.75 | @ 3.00 |
| Screenings | 3.00 | @ 3.25 |
| Card Middles | 4.00 | @ 5.00 |
| **Glassine—** | | |
| Bleached, basis 25 lbs. | 13.00 | @16.00 |
| Bleached, basis 20 lbs. | 15.00 | @16.00 |
| (Delivered New York) | | |
| **Boards—per ton—** | | |
| News | 37.50 | @45.00 |
| Straw | 52.50 | @55.00 |
| Chip | 35.00 | @42.50 |
| Binders' Boards | 65.00 | @67.50 |
| Sgl. Mla. Ll. Chip | 47.50 | @52.50 |
| Wood Pulp | 80.00 | @85.00 |
| Container | 52.50 | @55.00 |
| 85 Test Jute Liner | 52.50 | @55.00 |

## Mechanical Pulp

(Ex-Dock)

| | | |
|---|---|---|
| **No. 1 Imported—** | | |
| Moist | 28.00 | @31.25 |
| Dry | 32.00 | @34.00 |
| (F. o. b. Mill) | | |
| No. 1 Domestic | 26.00 | @29.00 |
| Screenings | 15.00 | @20.00 |

## Chemical Pulp

(Ex-Dock, Atlantic Ports)

| | | |
|---|---|---|
| **Sulphite (Imported)—** | | |
| Bleached | 3.65 | @ 4.40 |
| Easy Bleaching | 2.75 | @ 2.90 |
| No. 1 strong unbleached | 2.50 | @ 2.80 |
| Mitscherlich unbleached | 2.55 | @ 3.25 |
| No. 2 strong unbleached | 2.40 | @ 2.50 |
| No. 1 Kraft | 2.50 | @ 2.75 |
| No. 2 Kraft | 2.40 | @ 2.50 |
| **Sulphate—** | | |
| Bleached | 3.75 | @ 3.85 |
| (F. o. b. Pulp Mill) | | |
| **Sulphite (Domestic)—** | | |
| Bleached | 3.40 | @ 4.75 |
| Easy Bleaching Sulphite | 2.60 | @ 2.75 |
| News Sulphite | 2.40 | @ 2.50 |
| Mitscherlich | 3.00 | @ 3.25 |
| Kraft (Domestic) | 2.50 | @ 3.30 |
| Soda Bleached | 3.15 | @ 3.30 |
| **Sulphate Screenings—** | | |
| Coarse | .75 | @ .95 |
| Refined | 1.50 | @ 1.65 |

## Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

| | | |
|---|---|---|
| **Shirt Cuttings—** | | |
| New White, No. 1 | 11.00 | @11.50 |
| New White, No. 2 | 8.00 | @ 8.50 |
| Silesias No. 1 | 7.25 | @ 7.75 |
| New Unbleached | 10.50 | @11.00 |
| Washables | 4.25 | @ 4.75 |
| Fancy | 5.50 | @ 6.00 |
| Blue Overall | 6.75 | @ 7.25 |
| New Blue Prints | 5.25 | @ 5.50 |
| New Soft Blacks | 5.25 | @ 5.75 |
| Mixed Khaki Cuttings | 4.75 | @ 5.25 |
| Pink Corset Cuttings | 8.00 | @ 8.50 |
| O. D. Khaki Cuttings | 5.25 | @ 5.75 |
| Men's Corduroy | 3.75 | @ 4.25 |
| New Mixed Blacks | 3.50 | @ 3.75 |
| **Old Rags** | | |
| White, No. 1— | | |
| Repacked | 5.50 | @ 6.00 |
| Miscellaneous | 4.50 | @ 5.00 |
| White, No. 2— | | |
| Repacked | 3.00 | @ 3.50 |
| Miscellaneous | 2.50 | @ 2.75 |
| St. Soiled, White | 2.00 | @ 2.15 |
| Thirds and Blues— | | |
| Repacked | 2.25 | @ 2.50 |
| Miscellaneous | 1.75 | @ 2.00 |
| Black Stockings | 3.25 | @ 3.75 |
| Roofing Rags— | | |
| Cloth Strippings | 1.70 | @ 1.80 |
| No. 1 | 1.70 | @ 1.80 |
| No. 2 | 1.55 | @ 1.65 |
| No. 3 | 1.30 | @ 1.40 |
| No. 4 | 1.25 | @ 1.35 |
| No. 5A | .95 | @ 1.05 |

## Foreign Rags

| | | |
|---|---|---|
| New Dark Cuttings | 2.50 | @ 3.00 |
| New Mixed Cuttings | 2.75 | @ 3.25 |
| New Light Silesias | 7.00 | @ 7.50 |
| Light Flannelettes | 7.50 | @ 8.00 |
| Unbleached Cottons | 10.00 | @11.00 |
| New White Cuttings | 10.50 | @11.50 |
| New Light Oxfords | 7.00 | @ 7.50 |
| New Light Prints | 5.50 | @ 6.50 |
| No. 1 White Linens | 7.25 | @ 8.00 |
| No. 2 White Linens | 5.50 | @ 6.25 |
| No. 3 White Linens | 4.50 | @ 5.00 |
| No. 4 White Linens | 3.00 | @ 3.50 |
| Old Extra Light Prints | 2.75 | @ 3.25 |
| Ord. Light Prints | 2.25 | @ 2.50 |
| Med. Light Prints | 1.90 | @ 2.10 |
| Dutch Blue Cottons | 2.15 | @ 2.30 |
| French Blue Linens | 2.65 | @ 2.75 |
| German Blue Linens | 2.35 | @ 2.55 |
| German Blue Cottons | 2.10 | @ 2.20 |
| Checks and Blues | 1.75 | @ 1.90 |
| Lindsay Garments | 1.80 | @ 1.85 |
| Dark Cottons | 1.60 | @ 1.65 |
| Old Shopperies | 1.50 | @ 1.55 |
| New Shopperies | 1.50 | @ 1.60 |
| French Blues | 2.10 | @ 2.25 |

## Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

| | | |
|---|---|---|
| Gunny No. 1— | | |
| Foreign | 1.60 | @ 1.70 |
| Domestic | 1.70 | @ 1.75 |
| Wool Tares, light | 1.60 | @ 1.65 |
| Wool Tares, heavy | 1.60 | @ 1.65 |
| Bright Bagging | 1.60 | @ 1.65 |
| Small Mixed Rope | 1.25 | @ 1.40 |
| Manila Rope— | | |
| Foreign | 3.35 | @ 3.65 |
| Domestic | 3.25 | @ 4.00 |
| New Burlap Cut | 2.75 | @ 3.00 |
| Hessian Jute Threads— | | |
| Foreign | 3.50 | @ 4.00 |
| Domestic | 3.25 | @ 3.50 |

## Old Waste Papers

(F. o. b. New York)

| | | |
|---|---|---|
| **Shavings—** | | |
| Hard, white, No. 1 | 3.25 | @ 3.50 |
| Hard, white, No. 2 | 2.40 | @ 2.55 |
| Soft, White, No. 1 | 2.50 | @ 2.60 |
| White envelope cuttings | 3.25 | @ 3.50 |
| Flat Stock— | | |
| Stitchless | 1.70 | @ 1.80 |
| Overissue Mag. | 1.70 | @ 1.80 |
| Solid Flat Book | 1.65 | @ 1.75 |
| Crumpled No. 1 | 1.15 | @ 1.25 |
| Solid Book Ledger | 2.00 | @ 2.10 |
| Ledger Stock | 1.70 | @ 1.80 |
| New B. B. Chips | .65 | @ .75 |
| New Env. Cut | 2.40 | @ 2.60 |
| Manilas— | | |
| New Cuttings | 1.60 | @ 1.85 |
| Extra No. 1 old | 1.25 | @ 1.35 |
| Print | .75 | @ .80 |
| Container | .60 | @ .65 |
| Bogus Wrapper | .75 | @ .85 |
| Old Kraft Machine Compressed bales | 1.75 | @ 1.85 |
| News— | | |
| No. 1 White News | 1.70 | @ 1.75 |
| Strictly Overissue | .85 | @ .95 |
| Strictly Folded | .60 | @ .65 |
| No. 1 Mixed Paper | .45 | @ .50 |
| Common Paper | .30 | @ .35 |

## Waterproof—Leakproof—hold their Shape

HERE is a dish that is not only waterproof and rigid as wood—but that actually sells for less than any other dish on the market. Paprus Dishes are moulded from pulp. They have no folds or staples. They are all in one piece. The most satis factory and economical dish the dealer can buy. Write for price list.

*Paprus Dishes used as covered . ntainer*

**PAPRUS DISHES**

KEYES FIBRE COMPANY, Inc.
*General Sales Offices:* GRAYBAR BLDG., NEW YORK
*Factory:* Waterville, Maine JOHN M. HART COMPANY, INC., *Manager of Sale*

## CLAY OF ABSOLUTE UNIFORMITY

***American Made for American Trade***

**Two Leading American Clays**

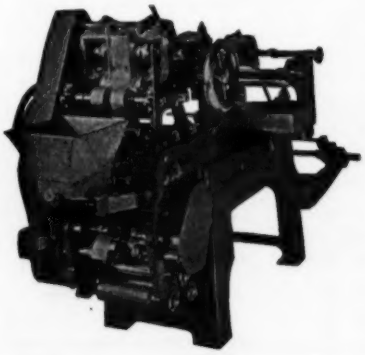
**H. T. BRAND**
**For Coating and Filling**
Now used in many of largest paper mills

**KLONDYKE BRAND**
**Filler Clay**

43 years' experience in American washed clays are back of these products.

***Ask for Samples***

**EDGAR BROS. CO.**
50 Church Street *New York*



# HIGHEST SPEED Paper Bag Machinery

**Get My Quotations Before Placing Your Orders**
***Special Machinery Designed and Built***

**A. L. PARRISH**
**1702 Robinson St., South Bend, Ind.**

### Twines

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| No. 1 | .39 | @ | .40 |
| No. 2 | .37 | @ | .38 |
| No. 3 | .36 | @ | .37 |
| B. C., 18 basis | .38 | @ | .40 |
| A. B. Italian, 18 basis | .48 | @ | .53 |
| **Finished Jute—** | | | |
| Dark 18 basis | .24 | @ | 25 |
| Light 18 basis | .27 | @ | .28 |
| **Jute Wrapping, 3-6 Ply—** | | | |
| No. 1 | .19 | @ | .21 |
| No. 2 | .18 | @ | .20 |
| **Tube Rope—** | | | |
| 4-ply and larger | .16 | @ | .17 |
| **Fine Tube Yarn—** | | | |
| 5-ply and larger | .21 | @ | .25 |
| 4-ply | .25 | @ | .29 |
| 3-ply | .28 | @ | .32 |
| **Unbnished India—** | | | |
| Basis | .13 | @ | .14 |
| **Paper Makers Twine** | | | |
| Balls | .11 | @ | .12 |
| **Box Twine, 2-3 ply** | .15 | @ | .17 |
| Jute Rope | .17 | @ | .19 |
| **Amer. Hemp. c** | .29 | @ | .31 |
| **Sisal Hay Rope—** | | | |
| No. 1 Basis | .16 | @ | .18 |
| No. 2 Basis | .14 | @ | .16 |
| **Sisal Lath Yarn—** | | | |
| No. 1 | .14 | @ | .16 |
| No. 2 | .12 | @ | .14 |
| **Manila Rope** | .22 | @ | .24 |

## CHICAGO

| | | | |
|---|---|---|---|
| All Rag Bond | .35 | @ | .41 |
| No. 1 Rag Bond | .25 | @ | .35 |
| No. 2 Rag Bond | .14 | @ | .25 |
| Water Marked Sulphite Bond | .09 | @ | .12 |
| Sulphite Bond | .06¾ | @ | .11 |
| Superfine writing | .18 | @ | .24 |
| No. 1 fine writing | .14 | @ | .18 |
| No. 2 fine writing | .12 | @ | .14 |
| No. 3 fine writing | .08½ | @ | .12 |
| No. 1 M. F. Book | .06½ | @ | .07¾ |
| No. 2 M. F. Book | .05½ | @ | .06¼ |
| No. 1 S.&S.C. Book | .06¾ | @ | .07¾ |
| No. 2 S.&S.C. Book | .05¾ | @ | .06½ |
| Coated Book | .07½ | @ | .12 |
| Coated Label | .07½ | @ | .10 |
| News—Roll, mill | .03½ | @ | .04¼ |
| News—Sheets, mill | .03¾ | @ | .04¾ |
| No. 1 Manila | .04¼ | @ | .05¾ |
| No. 1 Fibre | .04¾ | @ | .05¼ |
| No. 2 Manila | .04¼ | @ | .04¾ |
| Butcher's Manila | .04 | @ | .04½ |
| No. 1 Kraft | .06¼ | @ | .06½ |
| Southern Kraft | .03¾ | @ | .04 |
| No. 2 Kraft | .04 | @ | .04¼ |
| Wood Tag Boards | .04¼ | @ | .06¼ |
| Sulphite Screenings | .03 | @ | .03¼ |
| **Manila Tissue—** | | | |
| 24x36 Sheet | .07 | @ | .07¼ |
| **White Tissue—** | | | |
| 20x30 Sheet | .07¼ | @ | .07½ |
| **Boards, per ton—** | | | |
| (Delivered Central Territory) | | | |
| Plain Chip | 37.50 | @ | 41.00 |
| Solid News | 47.50 | @ | — |
| Manila Lined Chip | 55.00 | @ | — |
| **Container Lined—** | | | |
| (Delivered Central Territory) | | | |
| 85 Test | 65.00 | @ | 70.00 |
| 100 Test | 70.00 | @ | — |

### Old Papers

(F. o. b. Chicago)

| | | | |
|---|---|---|---|
| **Shavings—** | | | |
| No. 1 Hard White | 2.80 | @ | 2.95 |
| White Env. Cuttings | 2.90 | @ | 3.00 |
| No. 1 Soft Shavings | 2.50 | @ | 2.60 |
| No. 1 Mixed | 1.00 | @ | 1.05 |
| No. 2 Mixed | .90 | @ | 1.00 |
| Ledger & Writings | 1.55 | @ | 1.65 |
| Solid Books | 1.25 | @ | 1.35 |
| Blanks | 1.70 | @ | 1.80 |
| Kraffs | 1.90 | @ | 2.05 |
| New Kraft Cuts | 2.25 | @ | 2.35 |
| Manila Envelope Cuttings | 2.00 | @ | 2.10 |
| Ex. No. 1 Manila | 1.55 | @ | 1.65 |
| Print Manila | .90 | @ | 1.00 |
| Folded News (oversisue) | .65 | @ | .75 |
| **Old Newspapers—** | | | |
| No. 1 | .65 | @ | .75 |
| No. 2 | .60 | @ | .65 |
| **Mixed Papers—** | | | |
| No. 1 | .70 | @ | .80 |
| **Roofing Stocks—** | | | |
| (F. o. b. Chicago, net cash) | | | |
| No. 1 | 30.00 | @ | — |
| No. 2 | 28.00 | @ | — |

## PHILADELPHIA

### Paper

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Bonds | .06 | @ | .40 |
| Ledgers | .10 | @ | .40 |
| **Writings—** | | | |
| Superfine | .13 | @ | .18 |
| Extra fine | .20 | @ | .22 |
| Fine | .18 | @ | .26½ |
| Fine, No. 2 | .15 | @ | .25 |
| Fine, No. 3 | .10 | @ | .20 |
| Book, M. F. | .06 | @ | .07 |
| Book, S. S. & C. | .06 | @ | .07½ |
| Book, Coated | .10 | @ | .16 |
| Coated Lithograph | .07 | @ | .11 |
| Label | .07 | @ | .11 |
| News | .03½ | @ | .04 |
| No. 1 Jute Manila | .08½ | @ | .09 |
| Manila Sul., No. 1 | .04½ | @ | .05½ |
| Manila No. 2 | .03¾ | @ | .04 |
| No. 2 Kraft | .05¾ | @ | .06 |
| No. 1 Kraft | .06½ | @ | .07 |
| Common Bogus | .03 | @ | .03½ |
| Straw Board | 52.50 | @ | 75.00 |
| News Board | 38.00 | @ | 42.00 |
| Chip Board | 35.00 | @ | 40.00 |
| Wood Pulp Board | 4.50 | @ | 5.00 |
| (Carload Lots) | | | |
| **Binder Boards—** | | | |
| No. 1, per ton | 75.00 | | |
| No. 2, per ton | 70.00 | | |
| Carload lots | 60.00 | @ | 65.00 |
| **Tarred Felts—** | | | |
| Regular | 53.00 | @ | 55.00 |
| Slaters (per roll) | 84 | @ | .94 |
| **Best Tarred, 1-ply (per roll)** | 1.85 | @ | 1.95 |
| **Best Tarred, 2-ply (per roll)** | 1.44 | @ | 1.54 |
| **Best Tarred, 3-ply** | 1.93 | @ | 2.08 |

### Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

| | | | |
|---|---|---|---|
| **Shirt Cuttings—** | | | |
| New White, No. 1 | .10½ | @ | .11 |
| New White, No. 2 | .07 | @ | .07½ |
| Light Silesias | .07 | @ | .07½ |
| Silesias, No. 1 | .08½ | @ | .09 |
| Black Silesia, soft | .05 | @ | .05½ |
| New Unbleached | .10½ | @ | .11 |
| Washable, No. 1 | .04½ | @ | .05 |
| Washable, No. 2 | .03 | @ | — |
| Fancy | | | |
| **Cottons—According to grades—** | | | |
| Blue Overall | .07½ | @ | .08 |
| New Blue | .03 | @ | .03½ |
| New Black Soft | .05 | @ | .05¾ |
| New Light Seconds | .02½ | @ | .03 |
| New Dark Seconds | 1.85 | @ | 2.00 |
| **Khaki Cuttings—** | | | |
| No. 1 O. D. | .05½ | @ | .05¾ |
| No. 2 Mixed | .04½ | @ | .04¾ |
| **Corduroy** | .03 | @ | .03½ |
| New Canvas | .08½ | @ | .09 |
| New Black Mixed | .03¾ | @ | .04½ |

### Bagging

(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| **Gunny, No. 1—** | | | |
| Foreign | 1.50 | @ | 1.60 |
| Domestic | 1.75 | @ | — |
| Manila Rope | 3.50 | @ | 4.00 |
| Sisal Rope | 1.50 | @ | — |
| Mixed Rope | 1.10 | @ | 1.25 |
| **Scrap Burlaps—** | | | |
| No. 1 | 1.50 | @ | 1.60 |
| No. 2 | 1.10 | @ | 1.20 |
| **Wool Tares, heavy** | 3.00 | @ | — |
| Mixed Strings | 1.15 | @ | 1.25 |
| **No. 1. New Light Burlap** | 2.50 | @ | 2.75 |
| **New Burlap Cuttings** | 2.00 | @ | 2.25 |

### Old Papers

(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| **Shavings—** | | | |
| No. 1 Hard White | 3.20 | @ | 3.25 |
| No. 2 Hard White | 2.75 | @ | 3.00 |
| No. 1 Soft White | 2.50 | @ | 2.60 |
| No. 2 Soft White | 1.90 | @ | 2.00 |
| No. 1 Mixed | 1.50 | @ | 1.60 |
| No. 2 Mixed | .90 | @ | 1.00 |
| Solid Ledger Stock | 1.96 | @ | 2.00 |
| Writing Paper | 1.65 | @ | 1.70 |
| No. 1 Books, heavy | 1.50 | @ | 1.60 |
| No. 2 Books, light | 1.20 | @ | 1.25 |
| No. 1 New Manila | 2.40 | @ | 2.50 |
| No. 1 Old Manila | 1.50 | @ | 1.60 |
| Print Manila | .95 | @ | 1.00 |
| Container Manila | .85 | @ | .90 |
| Old Kraft | 2.25 | @ | 2.50 |
| Common Paper | .50 | @ | .55 |
| No. 1 Mixed Paper | .65 | @ | .70 |
| Straw Board, Chip | .65 | @ | .75 |
| Binders Board, Chip | .65 | @ | .75 |
| Overissue News | .90 | @ | .95 |
| Old Newspaper | .70 | @ | — |

### Domestic Rags (Old)

| | | | |
|---|---|---|---|
| **White, No. 1—** | | | |
| Repacked | 4.25 | @ | 4.50 |
| Miscellaneous | 3.50 | @ | 3.75 |
| **White, No. 2—** | | | |
| Linens and Blues—Repacked | 2.00 | @ | 2.25 |
| Miscellaneous | 1.60 | @ | 1.80 |
| Black Stockings (Export) | 3.90 | @ | 4.25 |
| Rooning Stock— | | | |
| Foreign No. 1 | 1.65 | @ | 1.75 |
| Repacked | .04½ | @ | .02¾ |
| No. 2 | 1.30 | @ | 1.35 |
| No. 3 (Roofing) | 1.15 | @ | 1.25 |
| No. 4 | 1.00 | @ | 1.15 |
| No. 5A | .75 | @ | .85 |
| B | .65 | @ | .75 |
| C | .65 | @ | .75 |

## BOSTON

### Paper

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| **Ledgers—** | | | |
| Sulphite | .07½ | @ | .15 |
| Rag content | .15 | @ | .30 |
| All rag | .38 | @ | .52½ |
| **Bonds—** | | | |
| Sulphite | .06½ | @ | .11½ |
| Rag content | .15 | @ | .30 |
| All rag | .36½ | @ | .65 |
| **Writings** | .07 | @ | .20 |
| Superfines | .11 | @ | .31 |
| **News** | .03½ | @ | .04 |
| **Book, Super** | .06 | @ | .09 |
| **Book, M. F.** | .05¾ | @ | .08½ |
| **Book, Coated** | .08½ | @ | .20 |
| **Coated Litho** | .09 | @ | .12 |
| **Label** | .09½ | @ | .15 |
| **Jute Manila No. 1** | .11 | @ | .13 |
| **Manila, Sul. No. 1** | .04¾ | @ | .06½ |
| **Manila, Sul. No. 2** | .03¾ | @ | .04½ |
| **No. 1 Kraft** | .05½ | @ | .06½ |
| **No. 2 Kraft** | .03¾ | @ | .04½ |
| **Common Bogus** | .02 | @ | .02¾ |
| Delivered New England points | | | |
| **Straw Boards, rolls** | .009 | | $2.50 |
| **Straw Board in Sheets, basis 35s to 70s** | 54.50 | @ | 55.00 |
| **Filled News Board** | 37.50 | @ | 40.00 |
| **Chip Board** | 35.00 | @ | 37.50 |
| **Single Manila Lined Chip** | | | 45.00 |
| **Single White, Patent Coated Newsboard** | | | |
| Bender | 67.50 | @ | 80.00 |
| **Wood Pulp Board** | 80.00 | @ | 85.00 |
| **Binder Boards** | 70.00 | @ | 75.00 |
| (F. o. b. Mill) | | | |
| **Tarred Felts—** | | | |
| Regular, carload lots | 65.00 | @ | — |

### Old Papers

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| **Shavings—** | | | |
| No. 1 Hard White | 3.25 | @ | 3.75 |
| No. 2 Hard White | 2.60 | @ | 2.90 |
| No. 1 Soft White | 2.50 | @ | 2.60 |
| No. 1 Mixed | 1.10 | @ | 1.15 |
| No. 2 Mixed | .85 | @ | .90 |
| Solid Ledger Stock | 2.35 | @ | 2.45 |
| No. 1 Books, Heavy | 1.55 | @ | 1.60 |
| No. 1 Books, Light | — | @ | 1.15 |
| Manila Env. Cuttings | 2.00 | @ | 2.25 |
| No. 1 Old Manila | 1.20 | @ | 1.25 |
| White Blank News | 1.70 | @ | 1.75 |
| Old Kraft | 1.85 | @ | 1.90 |
| Print Manila | .80 | @ | .90 |
| No. 1 Mixed Paper | — | @ | .55 |
| Overissue News | .70 | @ | .85 |
| Old Newspapers | .60 | @ | .70 |
| Box Board, Chip | .55 | @ | .60 |

### Bagging

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| **Gunny No. 1—** | | | |
| Foreign | — | @ | 1.50 |
| **Manila Rope—** | | | |
| Foreign | 3.50 | @ | 3.75 |
| Domestic | 4.00 | @ | — |
| **Mixed Strings** | .90 | @ | 1.00 |
| **Jute Wool Strings** | — | @ | 1.00 |
| **Scrap Burlaps** | 1.50 | @ | 1.60 |
| **Scrap Sisal** | 1.60 | @ | 1.80 |
| **Scrap Sisal for shredding** | 1.75 | @ | 2.00 |
| **Wool Tares, heavy** | — | @ | 1.50 |
| **New Burlap Cutting** | 1.90 | @ | 2.00 |

### Domestic Rags (New)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| **Shirt Cuttings—** | | | |
| New White No. 1 | .09 | @ | .10 |
| Silesias, No. 1 | .06 | @ | .06½ |
| New Unbleached | .09½ | @ | .10 |
| Fancy | .04 | @ | .04½ |
| Washable | .04 | @ | .04½ |
| **Cottons—According to grades** | | | |
| Blue Overalls | .06¼ | @ | .06¾ |
| New Black, soft | .04 | @ | .04½ |
| Khaki Cuttings | .04 | @ | .04½ |
| O. D. Khaki | .05 | @ | — |
| Corduroy | .03 | @ | .03½ |
| New Canvas | .08 | @ | .08½ |

### Domestic Rags (Old)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| **Canvas** | .04½ | @ | — |
| **White No. 1—** | | | |
| Repacked | 4.75 | @ | 5.25 |
| Miscellaneous | 5.00 | @ | — |
| **White No. 2—** | | | |
| Repacked | 04½ | @ | 05 |
| Miscellaneous | 03½ | @ | 04 |
| **Twos and Blues** | — | @ | 2.50 |
| **Thirds and Blues—** | | | |
| Repacked | 2.00 | @ | 2.15 |
| Miscellaneous | 1.75 | @ | 1.90 |
| **Roofing Stock—** | | | |
| No. 1 | 1.65 | @ | 1.75 |
| No. 2 | 1.45 | @ | 1.55 |
| No. 3 | 1.05 | @ | 1.10 |
| No. 4 | 1.10 | @ | 1.15 |

### Foreign Rags

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| **Dark Cottons** | 1.55 | @ | 1.60 |
| **New No. 1 Shirt Cuttings** | 9.00 | @ | 10.00 |
| **Dutch Blues** | 2.00 | @ | 2.12½ |
| **Lace Curtains** | 5.25 | @ | 5.40 |
| **New Checks & Blues** | 4.25 | @ | 4.50 |
| **Old Fustians** | 1.90 | @ | — |

## TORONTO

### Paper

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| **Bond—** | | | |
| No. 1 Sulphite | .12½ | @ | — |
| No. 2 Sulphite | .10¾ | @ | — |
| No. 1 Colored | .13½ | @ | — |
| No. 2 Colored | .11¼ | @ | — |
| **Ledgers (sulphite)** | — | @ | — |
| **Ledgers, No. 1** | .36 | @ | — |
| **Ledgers, No. 2** | .27 | @ | — |
| **Writing** | .09½ | @ | .10 |
| **News f. o. b. Mills—** | | | |
| Rolls (carloads) | 3.25 | @ | — |
| Sheets (carloads) | 3.75 | @ | — |
| Sheets (2 tons or over) | 4.00 | @ | — |
| **Book—** | | | |
| No. 1 M. F. (carloads) | 7.50 | @ | — |
| No. 2 M. F. (carloads) | 7.25 | @ | — |
| No. 3 M. F. (carloads) | 7.00 | @ | — |
| No. 1 S. C. (carloads) | 8.00 | @ | — |
| No. 2 S. C. (carloads) | 7.75 | @ | — |
| No. 3 S. C. (carloads) | 7.50 | @ | — |
| No. 1 Coated and Litho | 13.25 | @ | — |
| No. 2 Coated and Litho | 12.25 | @ | — |
| No. 3 Coated and Litho | 11.50 | @ | — |
| Coated tinted | 14.50 | @ | — |
| **Wrapping—** | | | |
| Rag Brown | 4.95 | @ | — |
| White Wrap | 5.25 | @ | — |
| "B" Manila | 5.80 | @ | — |
| No. 1 Manila | 6.65 | @ | — |
| Fiber | 6.65 | @ | — |
| Kraft. M. F. | 7.00 | @ | — |
| M. G. | 7.00 | @ | — |

### Pulp

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ground Wood | 30.00 | @ | 31.00 |
| Sulphite easy bleaching | 62.00 | @ | — |
| Sulphite news grade | 62.00 | @ | — |
| Sulphite, bleached | 75.00 | @ | — |
| Sulphate | 65.00 | @ | — |

### Old Waste Paper

(In carload lots, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| **Shavings—** | | | |
| White Env. Cut | 3.00 | @ | — |
| Soft White Book Shavings | 2.85 | @ | — |
| White Blk. News | 1.60 | @ | — |
| **Book and Ledger—** | | | |
| Flat Magazine and Book Stock (old) | 1.40 | @ | — |
| Light and Crumpled Book Stock | 1.25 | @ | — |
| Ledgers and Writings | 1.50 | @ | — |
| Solid Ledgers | 1.50 | @ | — |
| **Manilas—** | | | |
| New Manila Cut | 1.50 | @ | — |
| Printed Manilas | 1.00 | @ | — |
| Kraft | 2.25 | @ | — |
| **News and Scrap—** | | | |
| Strictly Overissue | .80 | @ | — |
| Strictly Folded | .80 | @ | — |
| No. 1 Mixed Paper | .70 | @ | — |

### Domestic Rags

(Price to mills, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| No. 1 White Shirt Cuttings | .11½ | @ | — |
| Fancy Shirt Cuttings | .05½ | @ | — |

## FAIRBANKS' "SPHERO"

**The Perfect "Blow-Off" Valve**

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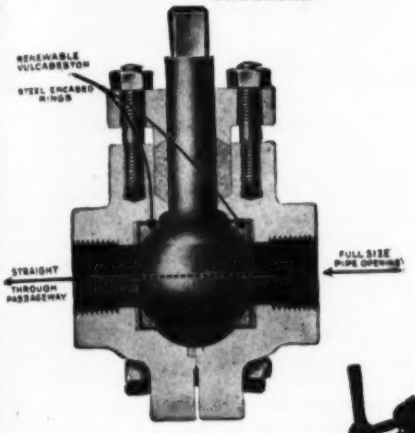

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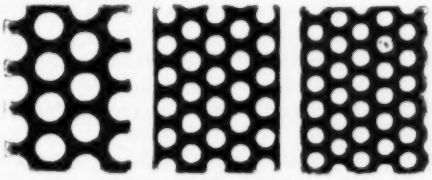

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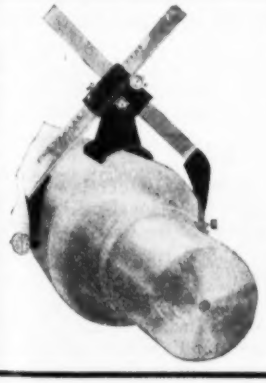

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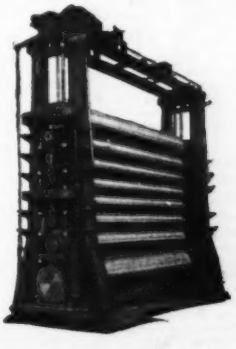
**Chilled Iron Calender and Press Rolls**
**Automatic Roll Grinding Machines**
**Improved Micrometer Roll Calipers**



**LOBDELL CAR WHEEL COMPANY**

*Established 1836*

**WILMINGTON, DELAWARE.**

# Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

| BONDS | BID | ASKED |
|---|---|---|
| Abitibi Power & Paper 5s, 1943 | 90 | 91 |
| Abitibi Power & Paper 6s, serially to 1934 | 100 | 102 |
| American Writing Paper 6s, 1947 | 81 | 87 |
| Bastrop Pulp & Paper 6½s, 1940 | 103 | 105½ |
| Bedford Pulp & Paper 6½s, 1942 | 97 | 100 |
| Belgo-Canadian Paper 6s, 1943 | 100 | 103 |
| British-Columbia Pulp & Paper 6s, 1950 | 89 | 92 |
| Brown Paper Mills Serial 6s, 1941 | 97 | 100 |
| Brown Company 5½s, 1946 | 98 | 101 |
| Bryant Paper 6s, 1942 | 98 | 101½ |
| Canadian Paper Board 7s, 19337 | 97 | 99½ |
| Cape Breton Pulp & Paper 6s, 1932 | 103 | ... |
| Celotex Company 6s, 1929 | 95 | 99 |
| Celotex Company 6½s, 1939 | 100 | 102 |
| Celotex Company of Chicago, Debenture 6s, 1936 | 95 | 98 |
| Central Paper Company Serial 6½s, 1942 | 86 | 89 |
| Central Paper 7s, 1934 | 78 | ... |
| Champion Coated Paper Serial 6½s, 1934 | 100 | ... |
| Champion Coated Fibre Notes 6s, 1941 | 100 | 102 |
| Champion Fibre Notes 6s, 1941 | 100 | 102 |
| Champion Fibre Notes 8s, 1930 | 95 | ... |
| Champion Paper Corp. 6s, 1945 | 95 | 98 |
| Container Corp. of America Debenture 6s, 1936, ex-warrants | 101 | 104 |
| Continental Paper Products 6½s, 1943 | 90 | 99 |
| Cornell Wood Products 7½s, 1937 | 103 | ... |
| Crown Willamette 6s, 1951 | 101 | 102 |
| Dells Paper & Pulp Serial 6s, 1938 | 95 | 98 |
| Dixon Board Mills Serial 6s, 1942 | 80 | ... |
| Donnaconna Paper 5½s, 1948 | 93 | ... |
| Eastern Manufacturing Co. 7s, 1938 | 97 | 100 |
| Escanaba Paper Serial 6s, 1939 | 98 | 100 |
| Escanaba Paper 6½s, 1935 | 96 | 99 |
| Filer Fibre Serial 7s, 1935 | 90 | 95 |
| Fort Irange Paper 7s, 1942 | 101 | ... |
| Fort William Paper 6s, 1946 | 100 | 104 |
| Fraser Company 6s, 1950 | 103 | 105 |
| Hammermill Paper Serial 6s, 1939 | 100 | ... |
| Hawley Pulp & Lumber 6s, 1946 | 96 | ... |
| Hawthorne Paper Company 6s, 1937 | 80 | ... |
| Hoberg Paper & Fibre 7s, 1937 | 94 | 97 |
| Industrial Fibre Corp. Debenture 8s, 1933 | 100 | ... |
| Itasca Paper & Prairie River Power Serial 5½s, 1938 | 99½ | ... |
| Itasca Paper & Prairie River Power Serial 6s, 1938 | 99 | ... |
| Jessup & Moore First 6s, 1945 | 83 | 90 |
| Kalamazoo Vegetable Parchment 6s, 1938 | 99 | 101 |
| Lake Superior Paper 6s, 1941 | 105 | 108 |
| Marathon Paper Mills Serial 5½s, 1942 | 99 | 101 |
| Marinette & Menominee 7½s, 1936 | 103 | 105 |
| Mead Pulp & Paper 5% Notes Serially, 1937 | 95 | 100 |
| Mead Fibre 7s, 1937 | 97 | 101 |
| Minnesota Ontario Paper Serial 6s, 1945 | 97½ | 100 |
| Murray Bay Paper Serial 6½s, 1947 | 102 | 105 |
| Munissing Paper Serial 6s, 1936 | 98 | ... |
| Nekoosa Edwards Paper 6s, 1928-42 | 96 | ... |
| Ontario Pulp & Paper 6s, 1931 | 108½ | 110½ |
| Orono Pulp & Paper 6s, 1943 | 99 | ... |
| Orono Pulp & Paper 5s, 1941 | 96¼ | ... |
| Oswego Falls Corp. 6s, 1941 | 99 | 102 |
| Parker-Young Company 6½s, 1944 | 98 | 100 |
| Paterson Parchment Paper 6s, 1938 | 101 | 103 |
| Penobscot Chemical Fibre 6s, 1942 | 102 | 105 |
| Port Alfred Pulp & Paper 5½s, 1947 | 98 | 100 |
| Price Brothers 6s, 1943 | 105 | ... |
| Provincial Paper 5½s, 1947 | 98½ | ... |
| Queen City Paper 7s, 1933 | 98 | ... |
| River Raisin Paper 6s, 1936 | 98 | 100 |
| Riordan Pulp & Paper 6s, 1942 | 102 | 104 |
| Rolland Paper 6s, 1937 | 99 | 101 |
| St. Croix Paper Serial 5s, 1937 | 99 | ... |
| St. Helen Pulp & Paper 6½s, 1931 | 99 | 102 |
| St. Maurice Valley Corp. 6s, 1945 | 101 | 104 |
| St. Maurice Valley Corp. 5½s, 1947 | 98½ | 100½ |
| St. Regis Paper of Canada 6s,, 1931 | 100 | 101½ |
| St. Regis Paper of Canada 6½s, 1934 | 100 | 102 |
| Smith (Howard) Paper Mills 7s, 1941 | 104 | 106 |
| Spanish River Pulp & Paper 6s, 1931 | 108 | 110 |
| Stevens-Thompson Paper 6s, 1942 | 94 | 96 |
| Taggard Brothers 6s, 1944 | 95 | 100 |
| Tait Paper & Color Industries 6s, 1934 | 88 | 92 |
| Ticonderoga Pulp & Paper 5s, 1930 | 94 | ... |
| Ticonderoga Pulp & Paper 6s, 1940 | 100 | 102 |
| Tomahawk Kraft Paper 6s, 1938 | 98 | ... |
| Tomahawk Pulp Paper 7s, 1932 | 99 | ... |
| Tonawanda Paper 5½s, Series 1941 | 99 | 102 |
| Union Bag & Paper Power 6s, 1932 | 98 | 100 |
| United Wall Paper Factories 6s, 1947 | 96 | 99 |
| Warren (S. D.) Company 6s, 1945 | 103 | 105 |
| Watab Paper 6½s, 1942 | 102 | ... |
| Waterway Paper Products 6s, 1931 | 100 | 101½ |
| Wayagamack Pulp & Paper 6s, 1951 | 103 | 105 |
| Westfield River Paper Serial 7s, 1943 | 89 | 93 |
| Whitmer-Parson Pulp & Lumber 8s, 1938 | 20 | 25 |
| Whitaker Paper 7s, 1942 | 108 | 110 |

| STOCKS | BID | ASKED |
|---|---|---|
| American Box Board, Pfd. | 9¼ | 10¼ |
| American Box Board, Com. | 9¼ | 10¼ |
| Am. Tissue Mills, 7% Pfd. | 90 | 93 |
| British Columbia P. & P. Pfd. | 65 | 75 |
| Brompton Pulp & Paper, 8% Pfd. | 100 | ... |
| Champion Fibre, 7% Pfd. | 108 | 110 |
| Diem & Wing, 7% Pfd. | 92 | 97 |
| Eastern Mfg. Co. 1st Pfd. | 55 | ... |
| Great Northern Paper, Com. | 75 | 78 |
| Hammermill Paper, new 6% Pfd. | 100 | ... |
| Hinde & Dauch, Com. | 125 | None Off. |
| Hinde & Dauch, 6% Pfd. | 102 | None Off. |
| Holyoke Card & Paper | 160 | None Off |
| Marathon Paper Mills, Com. | 150 | ... |
| Mengel Co., Pfd. | 102 | 104 |
| Midwest Box Co., 8% Pfd. | 98 | 103 |
| Midwest Box Co., 6% Pfd. | 95 | 99 |
| Louis De Jonge Co., 7% Pfd. | 94 | 97 |
| Oxford Papers, Com. | 195 | ... |
| Oxford Paper Co., Pfd. | 108 | 111 |
| Penobscot Chemical Fibre, Com. | 80 | ... |
| Richardson Co., Com. | 170 | ... |
| Sabin Robbins Paper Co., 8% Pfd. | 105 | 110 |
| St. Croix Paper | 155 | ... |
| St. Regis Paper Co., 7% Cum. Pfd. | 105 | 108 |
| Westfield River Paper Co., 1st Pfd. | Wanted | None Off |
| West Virginia Pulp and Paper Company | 55 | 57 |
| West Virginia Pulp and Paper, Pfd. | 100 | 103 |
| Whittaker Paper, 7% Cum. Pfd. | 105 | None Off |

## Fair Paper Demand in Boston

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass, January 14, 1929.—The paper industry here is in a generally good condition. Some fine paper dealers are doing a brisk business and few, if any, are securing less than a fair amount of orders. The volume of orders has improved since the holidays and with some it is increasing. Reports from the kraft market are also favorable.

Substantial orders are being received for box board. The situation in this commodity is less unsatisfactory than it was, although board is still moving at comparatively low figures. The market for chip board is apparently stabilizing at $37.50, and a fair volume is moving at that price, but some is still being sold at $32.50. Filled news is quotable around $35 to $40.

The position of old papers and rags is practically the same, although some grades are somewhat weaker. No. 1 books, heavy, have registered a decline, an over-supply being given as the reason. This grade is quotable at 1.50, with a downward tendency, compared with a former range of 1.55 to 1.60. Old newspapers are also lower for a similar reason, being quotable at .60 to .65, compared with .65 to .70. Mills are showing a lack of interest in dark cottons, and they are said to be well stocked for requirements. The maximum price is now 1.55, with a declining trend, compared with a previous quotation of 1.55 to 1.60.

The annual dinner of Rutter & McNaught, Inc., was held Thursday evening, January 10, at the Hotel Essex. A concert of vocal and instrumental music was enjoyed and followed by dancing.

John A. Andrew, formerly of Stone & Andrew, this city, later connected with Coy, Hunt Co., New York, has become associated with Meek & Whitney, Springfield, Mass., as vice president.

Lieutenant-Colonel Walter M. Pratt, of the Pratt Paper Co., has been appointed as aide on the staff of Governor Allen.

## Mid-States Gummed Paper Co. Opens New Office

CHICAGO, Ill., January 15, 1929.—The Mid-States Gummed Paper Company announce the opening of a branch office in Cleveland, Ohio, at 241 Euclid Avenue Building, Telephone Cherry 1040. This office will be in charge of Paul S. Hoag, who for some time has been covering the Ohio and East-Central territory as a sales representative for the above organization.

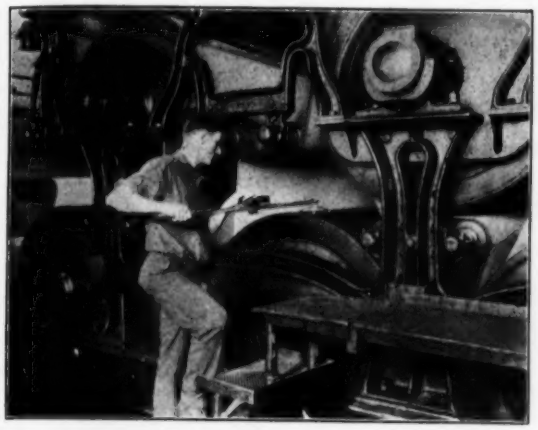
The volume of sales for 1928 for the Mid-States Gummed Paper Co. was unusually good, and the prospects for 1929, it is stated, are even better.

Manufacturing space was increased approximately 33 1/3 per cent during 1928 to take care of the increased volume of business, and it is contemplated that additional space will be required in 1929.

The establishment of the Cleveland branch office is in keeping with the expansion program recently announced by this organization, and its intention to give increasingly better service and accommodations to its customers.

## McElwain Club Elects Officers

HOLYOKE, Mass., January 15, 1929.—The annual meeting of the McElwain Club, composed of employees of the Crocker-McElwain Company and the Chemical Paper Manufacturing Company, was held last Wednesday night and the following officers elected: President, Stephen Stapley; vice president, Robert True; secretary, William Astley; treasurer, A. M. Chadwick. C. A. Crocker, president of the concerns, was a guest and speaker, and also Vice President E. C. Tucker and Treasurer Joseph Holmes spoke.



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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

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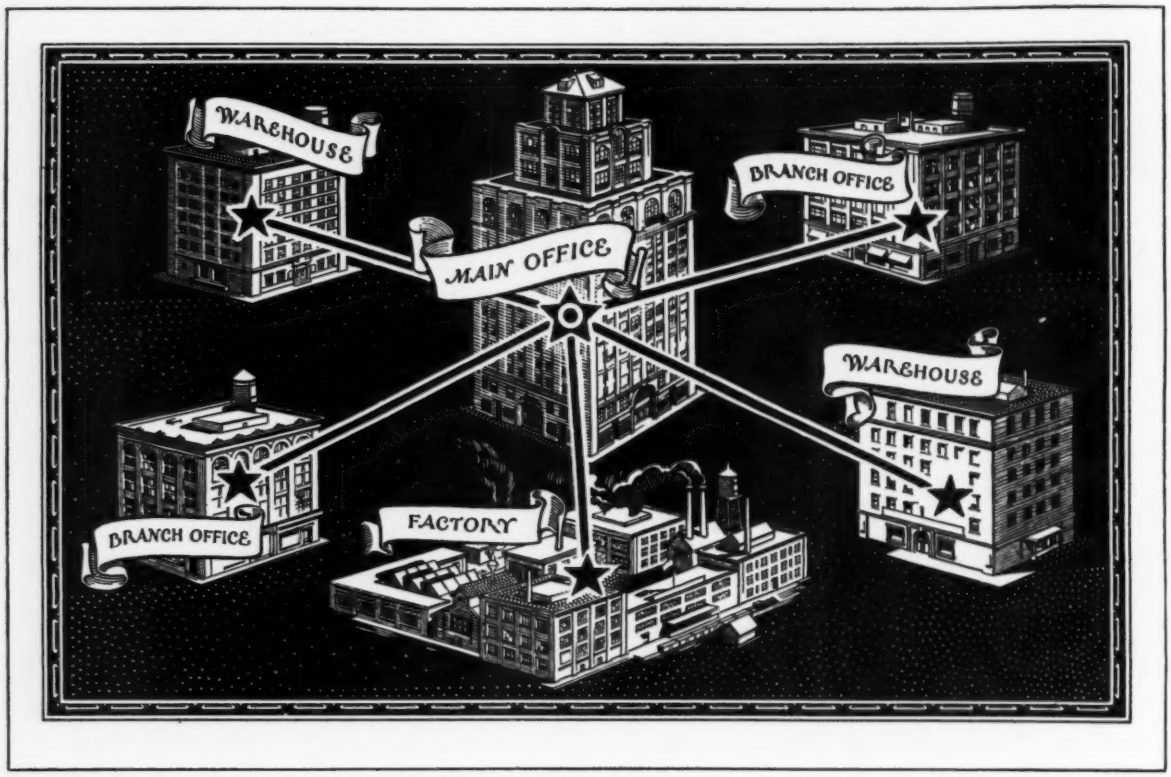


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